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NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

MARITIME STRATEGY IN PAKISTAN

by

Raja Rab Nawaz

December 2004

Thesis Co-Advisor:	Peter R. Lavoy
Thesis Co-Advisor:	Robert E. Looney

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REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.			
1. AGENCY USE ONLY ***(Leave blank)***	**2. REPORT DATE** December 2004	**3. REPORT TYPE AND DATES COVERED** Master's Thesis	
4. TITLE AND SUBTITLE: Maritime Strategy in Pakistan			**5. FUNDING NUMBERS**
6. AUTHOR(S) Raja Rab Nawaz			
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000			**8. PERFORMING ORGANIZATION REPORT NUMBER**
9. SPONSORING /MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A			**10. SPONSORING/MONITORING AGENCY REPORT NUMBER**
11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense, the U.S. Government, the Pakistan Navy or the Government of Pakistan..			
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited			**12b. DISTRIBUTION CODE** **A**

13. ABSTRACT (maximum 200 words)

As a maritime nation, Pakistan has not been able to effectively exploit the sea and its resources. Decades of neglect have hampered the development of the maritime sector, which in turn has hurt both economic growth and the national security of the country. While seaborne trade is the backbone of Pakistan's economy, the domestic shipping and shipbuilding industries are in disarray. The exploitation of offshore natural resources is restricted to coastal fisheries. Despite its animosity with neighboring India, Pakistan has until recently relied on two co-located ports at Karachi, which would be a vulnerable target in any war. The continental mindset of the policymakers has affected the development of the Pakistan Navy as an effective element of the military strategy.

This thesis argues that development of the maritime sector is important for both economic growth and the national security of Pakistan. In economic terms, the maritime sector can diversify the economic base and stimulate Pakistan's economic growth. The development of the Pakistan Navy both as a credible conventional and strategic force is important for protection of growing economic maritime interests against predation and coercion and also necessary to safeguard the strategic interests of the country.

14. SUBJECT TERMS Pakistan, maritime strategy, shipping, ports, Pakistan Navy, and second-strike capability.			**15. NUMBER OF PAGES** 121
			16. PRICE CODE
17. SECURITY CLASSIFICATION OF REPORT Unclassified	**18. SECURITY CLASSIFICATION OF THIS PAGE** Unclassified	**19. SECURITY CLASSIFICATION OF ABSTRACT** Unclassified	**20. LIMITATION OF ABSTRACT** UL

NSN 7540-01-280-5500 Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std. 239-18

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MARITIME STRATEGY IN PAKISTAN

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Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF ARTS IN SECURITY STUDIES
(Stabilization and Reconstruction)

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ABSTRACT

As a maritime nation, Pakistan has not been able to effectively exploit the sea and its resources. Decades of neglect have hampered the development of the maritime sector, which in turn has hurt both economic growth and the national security of the country. While seaborne trade is the backbone of Pakistan's economy, the domestic shipping and shipbuilding industries are in disarray. The exploitation of offshore natural resources is restricted to coastal fisheries. Despite its animosity with neighboring India, Pakistan has until recently relied on two co-located ports at Karachi, which would be a vulnerable target in any war. The continental mindset of the policymakers has affected the development of the Pakistan Navy as an effective element of the military strategy.

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I. INTRODUCTION

A. PURPOSE

Despite being a maritime nation whose sea-dependence is almost comparable to island nations or nations with long coastlines and limited land frontiers, Pakistan has not been able to effectively exploit the sea and its resources. The geo-strategic location of the country and the geo-politics surrounding it makes the access to sea extremely important. More than 95 percent of country's international trade is routed through the sea, which in 2003-04 approximately amounted to 36.3 percent of the Gross Domestic Product (GDP).[1] However, despite such heavy dependence, the maritime sector has been neglected primarily because of the continental mindset of the ruling elite. Over decades, this neglect has deteriorated the existing infrastructure and, as a consequence, the country has a non-performing shipbuilding industry, a declining merchant marine, and largely unexploited offshore natural resources. The Pakistan Navy, as an element of military power at sea, receives the least priority amongst the armed forces has never been accorded its rightful role in the overall national security strategy of the country.

As a result of this neglect, the maritime sector has failed to develop and is contributing inadequately to the overall economic growth. In terms of national security the overwhelming dependence on seaborne trade, reliance on co-located ports at Karachi,[2] and a weak navy to protect the maritime interests presents critical vulnerabilities considering the ongoing hostility with neighboring India.

---

[1] Total value of exports and imports for FY 2003-2004 stood at $24.9 billion. See Economic Survey 2003-2004, Ministry of Finance, Government of Pakistan, http://www.finance.gov.pk/survey/chapters/09-trade.PDF (1 September 2004). GDP of Pakistan in 2003 was $68.6 billion. See The World Bank country data on Pakistan, http://www.worldbank.org/cgi-bin/sendoff.cgi?page=/data/countrydata/aag/pak_aag.pdf (10 September 2004)

[2] Port Qasim is situated 52 kilometers east of Karachi. See Figure 1. The third commercial port at Gwadar is under construction and its first phase will be completed in January 2005.

There is, however, a glimmer of hope, which reflects the strategic shift in thinking of policymakers in Pakistan and a probable reversal of long endured neglect of the maritime sector. Construction of a deep-sea port at Gwadar, and introduction of business friendly policies for revival of shipping industry and exploitation of offshore resources are a few examples in this regard.

Figure 1: Coastal Map of Pakistan

Development of maritime sector in Pakistan is important for both economic growth and the national security of the country. In terms of economy, the maritime sector can diversify the economic base and stimulate economic growth. A strong Navy is necessary not only for protection of economic maritime interests against predation and coercion but also to safeguard the strategic interests of the country. At present the true potential of maritime sector is underexploited and thus is unable to significantly contribute to the economic growth of the country. The Pakistan Navy as an element of military power at sea has never been developed as an effective element of overall military strategy. Pakistan must realize the economic potential of its maritime sector and develop

it for sustained economic growth. It will also help in diversifying the economic base, which continues to rely heavily on agriculture. Policymakers in Pakistan need to look beyond their continental biases and develop the navy as an effective element of military strategy. The Pakistan Navy must be accorded its due role in the overall military strategy and developed as a credible conventional and strategic force to safeguard strategic interests of the country.

B. SIGNIFICANCE

1. Contribution of Maritime Sector in Economic Growth

Achieving sustained economic growth is one of the biggest challenges faced by Pakistan. It would not be wrong to say that retarded economic growth, poverty and lack of economic opportunities are some of the most important reasons for growing frustration amongst the people, which in some cases translate to extremism and even terrorism. The maritime sector in Pakistan has the potential to contribute significantly in the overall economic growth in many ways. A thriving shipping industry can help in saving foreign exchange, reduce freight cost and thus promote country's foreign trade. Moreover, it can earn revenues from profitable shipping operation, create added employment opportunities, and assure adequate and reliable shipping services. Ports provide the link between the sea and land transports and are a great source of revenue generation. The most profound economic aspect of ports is their ability to act as a hub of economic activity in the surrounding region. In the case of Pakistan, the emergence of Gwadar as a deep-sea port is extremely important because of its strategic location to attract the trade from Central Asian States and act as a major transshipment port. Another spin-off effect of Gwadar Port is the development of infrastructure in coastal areas and improvement in socio-economic condition of the people in region, both of which have been neglected since independence of the country in 1947.

The shipbuilding industry in Pakistan is facing severe financial difficulties in the absence of work and is continuously burdening government resources for its existence. Except for a short period in the 1970s, the shipbuilding industry has never been able to operate profitably. Since it is a strategic capability that the country cannot afford to

permanently lose, immediate attention is required to make it financially self-sustaining. Exploitation of offshore natural resources promises tremendous economic potential. At present the activity is restricted to living resources in terms of marine fisheries, which is a major source of employment in coastal areas. The activities of Pakistani fishermen are largely confined to territorial waters, and a vast expanse of the Exclusive Economic Zone (EEZ) remains unexploited. In the absence of modern processing plants, fish is exported in raw form as against a value-added product, which would provide a greater margin of profit. Exploration of offshore energy and mineral resources can change the outlook of Pakistan's economy if a major discovery is made in the future. This sector has remained neglected in the past. However, with the introduction of investment friendly policies for offshore exploration, private investors have shown a renewed interest to undertake offshore exploration of energy resources.

2. The Question of National Security

Ever since its independence in 1947, Pakistan has lived in an atmosphere of continuous animosity with neighboring India. The countries have gone to war thrice, and the possibility of such an eventuality in the future cannot be ruled out. Even the overt demonstration of nuclear weapons capability by the two countries has done little to improve the security situation in the region. This security competition has two main challenges vis-à-vis the maritime strategy.

First, depletion of national merchant marine in Pakistan has forced the country to depend on foreign carriers for international trade. In case of war or a heightened state of tension, reliance on foreign carriers can have adverse effects on the seaborne trade of the country. Foreign ships may refuse to ply in a war prone zone or increase the freight and insurance charges unacceptably high. This phenomenon is quite plausible considering the fact insurance charges for shipping bound to Pakistan skyrocketed during the U.S. attack on Afghanistan in 2001 and again during the second Gulf War in 2003.[3]

Second, navies, as an element of military power at sea, are developed by maritime nations to protect their strategic and economic interests. The development of the Pakistan

[3] Syed M. Aslam, "Impact of War on Foreign Trade," *Pakistan and Gulf Economist* (31 May -06 April, 2003).

Navy has not been proportionate with the growth of country's strategic and maritime interests. In fact, the continental mindset of the policymakers has not been able to appreciate a due role for the navy in the overall defense of the country and, as a consequence, it is afforded the least priority. Over several decades, this neglect has created a conventional imbalance in favor of the Indian Navy, which enjoys a 5:1 advantage over the Pakistan Navy in terms of combat vessels, air assets and manpower.[4]

This thesis argues that significant development of the Pakistan Navy is important for Pakistan for two reasons. First, limited conventional war at sea between India and Pakistan is more likely in future considering Indian Navy's conventional advantage; India's continued perception that it could credibly threaten the limited use of force,[5] and the fact that mutual nuclear deterrence makes the prospect of limited conventional conflict at sea more likely.[6] Second, mutual nuclear deterrence in South Asia is inherently unstable because both the countries do not possess credible second-strike capability, which leaves a chance of preemption in face of an imminent threat. Moreover, India's quest to acquire Airborne Warning and Control System (AWACS), theater ballistic missile defense system, and sea-based second-strike capability would give India the qualitative advantage needed to maintain a credible attack capability, which can result in breakdown of mutual deterrence.[7] It may not be possible for Pakistan to achieve parity in every move that India makes towards acquisition of conventional and strategic weapons due to economic reasons. However, Pakistan must improve the conventional warfighting capability of its navy to offset the conventional military superiority of the Indian Navy and develop a sea-based second-strike capability to maintain strategic equilibrium in the region. For Pakistan, acquisition of a sea-based second-strike capability is inevitable because it is only a matter of time before India will

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4 Jane's Sentinel Security Assessment - South Asia, Indian Navy, 16 April 2004.

5 "India and Pakistan: Towards Greater Bilateral Stability," *Strategic Survey 2003-2004,* 234.

6 Rear Admiral Richard Hill, RN (Retd), "Do We Need a New Definition of Medium Maritime Power?" in *Maritime Forces in Global Security,* ed. Ann L. Griffiths and Peter T. Haydon (Halifax: Centre for Foreign Policy Studies, Dalhousie University, 1994), 260.

7 Barry Nalebuff, "Minimal Nuclear Deterrence," *The Journal of Conflict Resolution*, September 1988, 412.

have a sea-based nuclear weapons capability, which would change the strategic equation in the region and may undermine existing nuclear deterrence equation.

C. ORGANIZATION

This thesis considers individual elements of maritime strategy to analyze their relevance vis-à-vis economic development and national security of the country. The thesis is divided into five chapters. Chapter II deals with the seaborne trade and shipping industry. This chapter establishes the relationship between economic growth and the seaborne trade, and analyses the role of shipping industry to support it. The shipping industry in Pakistan has suffered due to wrong economic policies of the government and the exclusion of private sector to invest in the industry. Revival of shipping industry in Pakistan is important both for economic growth and the national security of the country. However, such a development can only be realized with effective participation of the private sector. The policymakers in Pakistan must restore the lost trust of business community, acknowledge their right to make profit, and provide a level playing field to private and public sector for achieving meaningful investment and development of the shipping industry.

Chapter III discusses three elements related to maritime power, ports, shipbuilding industry, and exploitation of natural resources. Each element is analyzed separately with regards to its strategic and economic significance. Ports are important for their revenue-generation potential and also because of their catalytic role in promoting wide-ranged economic activities. The development of ports in Pakistan has progressed very slowly. However, this has changed in the last couple of years. The government in Pakistan has embarked on an ambitious plan to develop Gwadar as a deep-sea port and improve the existing infrastructure in the coastal regions. This is a step in the right direction and is expected to bring great economic benefit to the country and uplift the socio-economic conditions in the neglected areas along Makran coast. Gwadar is expected to provide sea access to land-locked Central Asian States via Afghanistan and also to the western provinces of China. The most important prospect is the ability of Gwadar to become a major transshipment port in the region in the long-term. The port shall also provide another operating base to the Pakistan Navy west of Karachi. The

shipbuilding industry in Pakistan remains economically unhealthy. However, because of its strategic importance in supporting indigenous ship construction activities of the navy, it is unwise to lose this ability.

The Long-term economic revival of the shipbuilding sector is only possible through foreign assistance both in terms of financial investment and technological assistance. Pakistan must explore the possibility of a joint collaboration with China, which is emerging as a major shipbuilder in the world. Exploitation of offshore resources has progressed very slowly and is mainly confined to living resources. The government has been able to attract some investment in exploration of offshore energy resources but the results of these the exploration activities are unknown as yet. There are two main challenges, which need to be addressed by the government immediately. Environmental pollution is depleting and contaminating offshore living resources and needs serious efforts by the government to control the flow of 300 million gallons of untreated domestic and industrial waste into the sea. Pakistan is slow in preparing its claim for the continental shelf and must accelerate the work for timely completion of scientific and technical data. The final date for submitting the claim to the Commission on the Limits of the Continental Shelf (CLCS) is 13 May 2009.

Chapter IV is about the Pakistan Navy as an element of military power at sea. This chapter analyzes the strategic and economic maritime interests of Pakistan, which is why it needs to maintain a navy. The development of the Pakistan Navy has remained neglected due to a number of reasons; the most important being the continental mindset of the ruling elite and their inability to perceive a definitive role for the navy in the overall military strategy. Despite the challenges that it faced since independence of the country in 1947, the Pakistan Navy has managed to struggle along and maintain itself as a small cohesive force. However, the decades of neglect have left the navy in a very disadvantageous position vis-à-vis the Indian Navy. The conventional imbalance between the two navies is increasing. It is argued that acquisition of nuclear weapons by both Pakistan and India and the continuing rivalry between the two countries have made the Pakistan Navy very important for national security of the country and stability in the region. This argument is built on two hypotheses: Limited conventional war between the

two navies in a future conflict more not less likely, acquisition of sea-based second-strike capability by India in near future will disturb the strategic equilibrium and may lead to the failure of nuclear deterrence. The policymakers in Pakistan will have to give up their continental bias and develop the navy as an important instrument of military strategy.

Chapter V summarizes major findings of the thesis and offers conclusions about the role of maritime strategy in economic development and national security of Pakistan. Maritime sector as a whole has remained neglected in Pakistan despite its heavy dependence on seaborne trade. The shipping industry is in disarray because of wrong economic policies adopted in the past. Development of domestic shipping industry is not possible without active participation of the private sector. To achieve any meaningful investment by the private sector, the government must provide a business friendly environment and restore the lost trust of business community. Shipbuilding industry in Pakistan has for most of the time remained a financially troubled industry and chances for its recovery in near future are not very optimistic. Since Pakistan needs the industry for strategic reasons to support its indigenous ship construction programs, Pakistan must look for possible Chinese financial and technological assistance for revival of the industry in the long-term.

The development of ports has remained slow in the past. However, the trend has changed and the there is an increased emphasis on development of ports and up gradation of existing infrastructure. Pakistan is expected to benefit from the development of Gwadar port in attracting trade from land-locked neighboring states and transformation of the port as a major transshipment or hub port in the long-term. Pakistan has not been able to effectively exploit the living and non-living resources present in its EEZ. While some efforts are underway to explore energy resources in offshore areas, there is lot to be done to benefit from the untapped offshore resources. Pakistan also must tackle the problem of environmental pollution, which is severely degrading its living resources. Moreover, if Pakistan is interested in claiming additional sea area in its continental shelf, it will have to expedite the collection of scientific data for preparation of such claim before the cut off date in 2009.

The Pakistan Navy as an element of military power at sea has always remained neglected because of the continental mindset of the ruling elite and overwhelming influence of the army. Such attitude has hampered the development of the navy, which is in a disadvantageous position vis-à-vis the Indian Navy. However, Pakistan cannot afford to ignore the development of its navy in future. The strategic parity that Pakistan achieved with India after going nuclear in 1998, demands the development of sea-based second-strike capability to counter similar attempts being taken by India. Moreover, Pakistan must improve the conventional warfighting capability of its navy to reduce the chances of any misadventure by the Indian Navy in a future conflict. Both these aspects are important for national security of the country in particular and for maintaining stability in the region.

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II. SEABORNE TRADE AND SHIPPING INDUSTRY IN PAKISTAN

A. INTRODUCTION

International trade has always been important in stimulating economic growth. With the push towards globalization and the advancement in the means of transportation, world economies have become increasingly interdependent. Openness to international trade is widely believed to accelerate economic growth,[8] which in part explains the rising trend in international trade. Sea provides the cheapest and the most efficient mode of transportation and more than 90 percent of the global trade is routed through the sea. Because of its geography and the geo-political situation in the region, Pakistan is heavily dependent on sea for its international trade, which in 2003-2004 approximately accounted for 36.3 percent of the Gross Domestic Product (GDP). Over 95 percent of country's international trade is routed through the sea.

While seaborne trade is the backbone of Pakistani economy, the domestic shipping industry has remained neglected in the past. As a result it is barely self-sustaining and contributes insignificantly to the overall economy. The number of ships in the national flag carrier, the Pakistan National Shipping Corporation, has steadily shrunk since the mid 1970s. At present, the Pakistani merchant fleet transports only 5 percent of the total seaborne trade as against the 40 percent outlined by the United Nations Commission on Trade and Development (UNCTAD) for national carriers.[9] Consequently the country is spending around $1.5 billion in foreign exchange annually on freight

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[8] David Dollar and Aart Kraay, "Trade, Growth, and Poverty," Development Research Group, The World Bank, March 2001, http://www.worldbank.org/research/growth/pdfiles/Trade5.pdf (5 September 2004)

[9] Pakistan has ratified the UNCTAD 'Convention of a Code of Conduct for Liner Conference,' of April 7, 1974. Chapter II of the convention explains that the national liner companies of each of the two countries whose mutual trade is carried in conference ships has the same rights as regards sharing the freight and quantity of cargo in the mutual foreign trade. Third country liner companies (if there are any) are entitled to obtain a considerable part, e.g., 20 percent of the freight and quantity of cargo of this trade. This is commonly referred as 40/40/20 sharing clause. See Hans Ludwig et al, *25 Years of World Shipping* (London: Fairplay Publications, 1984), 180-181and "Convention on a Code of Conduct for Liner Conferences," http://www.admiraltylawguide.com/conven/liner1974.html (7 October 2004)

charges, which is approximately 2.2 percent of the GDP.[10] Uninterrupted flow of seaborne trade is important not only for economic growth but also for national security of the country simply because of the reason that the economy and national security are interdependent. In case of Pakistan it is even more important because the country is heavily dependent on important energy resources.

The purpose of this chapter is to ascertain the importance of seaborne trade and the shipping industry as two main elements of a maritime strategy for Pakistan and to analyze why Pakistan has failed to develop its shipping industry. The impact on economic growth and implications for Pakistan's national security as a result of declining merchant marine will also be discussed. The neglect of shipping industry in Pakistan cannot be attributed to a single factor. The present state of shipping industry in Pakistan is because of a number of reasons such as; ill-advised economic policies, capital-intensive nature of shipping industry, unabated public corruption, continental mindset of the ruling elite, and the prevalent geo-political situation. The nationalization of private industry in mid 1970s can be identified as the single major source of the decline of not only the shipping industry but also a number of other industrial sectors.

The impact of a neglected shipping industry on economic growth is two pronged. First, is the inability to fully exploit the revenue generation potential from a modest shipping industry. Second, and more important, is the negative impact where the government is required to spend hard earned resources as freight bills for foreign carriers or to bail out inefficient and unsustainable public owned enterprises. Moreover, economic growth and national security are somewhat interrelated or interdependent concepts. In the case of Pakistan, co-located ports at Karachi, a depleted merchant marine, an overwhelming dependence on seaborne trade and a weak navy present a multitude of vulnerabilities. This is especially so because of the continued rivalry with neighboring India and a history of armed conflicts in the past. Any escalation short of war is enough to disrupt the seaborne trade and deter neutrals from plying in a war prone

[10] Regional Seminar on Liberalization of Maritime Transport Services under WTO GATS, Country Report Pakistan, http://www.unescap.org/tctd/nvg/wtogats2002files/pakistan_wtogats.pdf (16 May 2004); GDP of Pakistan for 2003 was $68.6 billion, http://www.worldbank.org/cgi-bin/sendoff.cgi?page=/data/countrydata/aag/pak_aag.pdf (10 September 2004).

zone, or it is likely to increase insurance charges as has happened in the past. Both the scenarios may have enormous negative effects on the economic growth and national security of the country.

In this chapter, the relationship between seaborne trade and economic growth, and their interdependence, is discussed. It is followed by a look at the seaborne trade of Pakistan and its relative importance vis-à-vis economic growth of the country. The supporting role of shipping industry in promoting seaborne trade and economic growth is discussed thereafter. The discussion on the shipping scenario in Pakistan is preceded by an analysis of potential advantages and disadvantages for developing countries to invest in shipping sector. The historical evolution of the shipping industry in the country and its continued decline is discussed before analyzing the challenges faced by the industry and the prospects for its revival.

B. SEABORNE TRADE

1. Seaborne Trade and Economic Growth

The world has witnessed an increasing reliance on international trade as the primary engine of economic growth and development. This is a major ideological shift: many economies in the past have pursued developmental strategies emphasizing self-sufficiency and protection of domestic markets. However, at present there is a growing consensus that the route to prosperity lies in integration with the global economy.[11] From 1950 to 1990, the value of trade grew almost 1.5 times as fast as the world economy, while in the last decade; world trade is now growing at around 2.2 times the rate of global economic growth.[12]

The bulk of international trade is routed through sea, which explains why seaborne trade remains one of the great economic success stories of the post-Second World War economies. Hill argues that seaborne trade not only contributes significantly

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[11] "Regional Shipping and Port Development Strategies – Under a Changing Maritime Environment", Maritime Policy Planning Model by UNESCAP/UNDP, 4, http://www.unescap.org/tctd/pubs/files/mppm_nov2001_escap2153.pdf (9 May 2004).

[12] Ibid., 5.

to economy but serves as a motor for the domestic economy and a catalyst for development and modernization. As evidence, he notes that in majority of the world's top thirty economies, seaborne exports make up over 10 percent of the national income.[13] In case of Pakistan, seaborne exports constitute 17 percent of the GDP.[14] Between 1945 and 2002 the seaborne trade grew from 0.55 billion tons to 5.88 billion tons.[15] Over the next ten years, total maritime trade is forecast to grow at between 3.5 percent and 4.0 percent per annum—slightly higher than was experienced through the 1990s.[16] The growth in the international container trade, which is ultimately driven by economic growth, has far exceeded the rate of growth of maritime trade as a whole.[17] For example, while total maritime trade volume grew at an average of 3.3 percent per annum from 1987 to 1999, the containerized cargoes grew at an annual average growth rate of 8.3 percent over the same period, leading to an increase of 160 percent in total maritime container movements. Due to the increasing importance of transshipment movements (the transfer of cargo from one ship to another) the number of containers handled in the world's ports grew at any even faster rate—in excess of 9 percent.[18]

The size of trade volume for different countries varies from few hundred thousand tons at one extreme to millions of tons at the other. There are a number of variables, which determine the size of the seaborne trade of a country. Stopford argues that the most obvious explanation for the size of a country's seaborne trade is the size of its economy. The bigger the economies the greater they are likely to generate the trade. However, the relationship between trade and the GNP is not static but dynamic. When countries grow, their economies change and so does their trade. Growth in trade differs

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[13] Hill, *Maritime Strategy for Medium Power*, 31.

[14] GDP of Pakistan in 2003 was $68.6 billion, see http://www.worldbank.org/cgi-bin/sendoff.cgi?page=/data/countrydata/aag/pak_aag.pdf (10 September 2004).

[15] Martin Stopford, *Maritime Economics Second Edition* (London: Routledge Press, 1997), 250, and "Review of Maritime Transport, 2003", UNCTAD Secretariat, United Nations, New York and Geneva, 2003, 4.

[16] "Regional Shipping and Port Development Strategies—Under a Changing Maritime Environment", Maritime Policy Planning Model by UNESCAP/UNDP, 15, http://www.unescap.org/tctd/pubs/files/mppm_nov2001_escap2153.pdf (9 May 2004).

[17] Ibid.

[18] Ibid., 13.

widely for countries at different stages of economic development and the margin for growth for countries at the initial stages of economic development is phenomenal.[19] Since the seaborne trade remains an economic phenomenon, other variables such as landmass of the country and the size of its population have an insignificant effect on it. It is the economic activity, which creates the demand for imports and the supply of exports, not the number of people.[20]

2. Seaborne Trade of Pakistan

Due to its geographic location and the geopolitical environment in the region, Pakistan depends heavily on the sea for its existence. More than 95 percent of country's trade is through the sea. Pakistan's exports and imports have shown a steady increase in the past. According to the "Economic Survey 2003-2004" published by government of Pakistan, the exports for fiscal year 2003-2004 have risen to $12.1 billion, while imports were targeted at $12.8 billion for the same period.[21] Combined together, the total trade value amounts to $24.9 billion, which is approximately 36.3 percent of the GDP.[22]

The exports over the past decade have registered a steady growth, however, the imports fluctuated due to financial problems in the mid and late 1990s as shown in Figure 1. The average annual growth rate of imports and exports is reflected in Figure 2. There are about 100 countries, which trade by sea with an annual trade volume exceeding 100,000 tons. According to the sea trade data of 1990-1991, Pakistan is ranked 45th among the first 100 sea-trading nations with a total trade volume of 25 million tons.[23] The total trade volume increased to 41.5 million tons in 2003, registering an average annual increase of approximately 1.25 million tons or 5 percent per annum.[24] During the

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[19] Stopford, *Maritime Economics Second Edition*, 240-243.

[20] Ibid.

[21] Economic Survey 2003-2004, Government of Pakistan, http://www.finance.gov.pk/survey/chapters/09-trade.PDF (12 September 2004).

[22] GDP of Pakistan for 2003 was $68.6 billion. See World Bank data, http://www.worldbank.org/cgi-bin/sendoff.cgi?page=/data/countrydata/aag/pak_aag.pdf (10 September 2004).

[23] Stopford, *Maritime Economics Second Edition*, 250.

[24] Regional Seminar on Liberalization of Maritime Transport Services under WTO GATS, Country Report Pakistan, http://www.unescap.org/tctd/nvg/wtogats2002files/pakistan_wtogats.pdf (7 May 2004).

year 2002 the growth of the economic output for developing economies reached 3.3 percent, well above the world average of 1.9 percent.

In South Asia, Pakistan almost doubled its output growth rate to 4.6 percent.[25] Real GDP for 2002-2003 was 5.1 percent and during the last fiscal year (2003-2004), it registered a growth of 6.4 percent.[26] The prospects for the future are also promising with an expected economic growth of 6.1 percent during the period 2003-2007.[27]

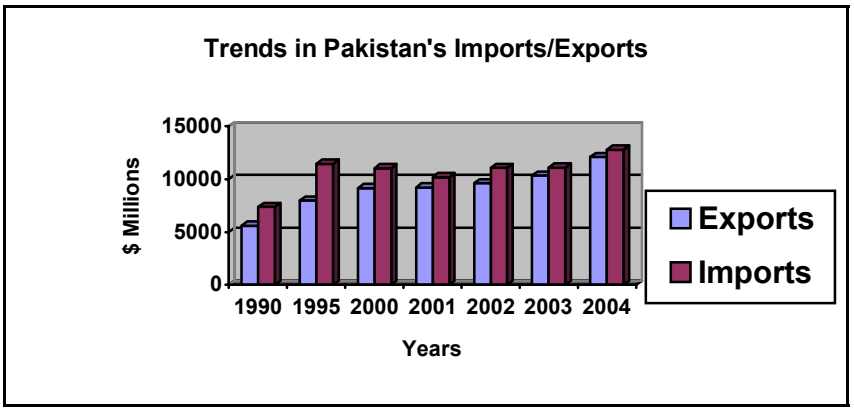

Figure 2: Sources: UNCTAD Handbook of Statistics 2003 & Economic Survey 2003-2004 Govt. of Pakistan

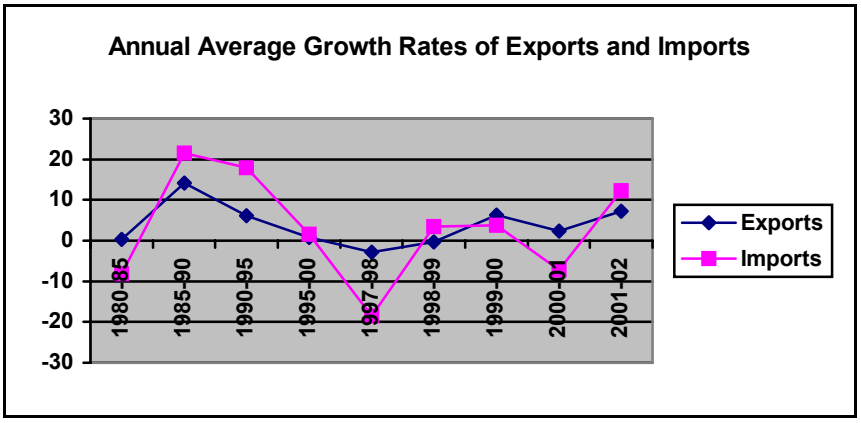

Figure 3: Sources: UNCTAD Handbook of Statistics 2003 & Economic Survey 2002-2003 Govt. of Pakistan

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[25] "Review of Maritime Transport, 2003", UNCTAD Secretariat, United Nations, New York and Geneva, 2003, 1.

[26] Economic Survey 2003-2004, Government of Pakistan, http://www.finance.gov.pk/survey/chapters/01-Growth.pdf (12 September 2004).

[27] "Pakistan at a Glance," World Bank, http://www.worldbank.org/cgi-bin/sendoff.cgi?page=/data/countrydata/aag/pak_aag.pdf (10 September 2004).

With the macro-economic stability and higher growth rates witnessed in the last couple of years, some economists argue that Pakistan is at the take-off stage,[28] which is defined as an economy in the second stage of economic development where there is a certain degree of capital accumulation to provide the foundation of economic growth.[29] Here the sea trade is small but very active and fast growing. The recent turn in the economic situation in Pakistan and the projected growth of trade for the year 2004-05 (export targets of $13.7 billion and imports $16.7 billion) reflect this change.[30] This is also explained by the fact that each country has its own unique Trade Development Cycle (TDC), which depends on its factors of production as well as cultural and commercial considerations.[31] At the earliest stages of development, imports of manufactures are paid for by cash crop exports. As industry expands, raw materials generate demand for sea transport if they are not available locally and are paid for by exports of semi-manufactures and any primary exports that are available.

The composition of Pakistan's exports has changed significantly over the years and is indicative of the progression along its trade development cycle where the reliance on primary commodity exports has gradually decreased. The principal changes have been the steep fall in the shares of primary and semi-manufactured exports and equally sharp increase in the share of manufactured exports. The share in terms of value of primary commodities and semi-manufactures in the overall exports has reduced from 19 percent and 24 percent respectively in 1990-1991 to 10 percent and 12 percent in 2002-2003. On the other hand share of manufactured goods has risen from 57 percent to 78 percent in the same period.[32] The changing composition of exports suggests that Pakistan no longer relies heavily on primary commodities exports for foreign exchange earnings.

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[28] Ashfaque H. Khan, "The Economy at Take-Off Stage," *Dawn* (Karachi), 5 May 2003, http://www.dawn.com/2003/05/05/ebr3.htm (17 October 2004).

[29] Stopford, *Maritime Economics Second Edition*, 241.

[30] *Dawn* (Karachi), 23 July 2004, http://www.dawn.com/2004/07/23/top1.htm (15 September 2004).

[31] Stopford, *Maritime Economics Second Edition*, 242.

[32] Economic Survey 2003-2004, Government of Pakistan, http://www.finance.gov.pk/survey/chapters/09-trade.PDF (12 September 2004).

Pakistan's imports are highly concentrated in a few items: machinery, petroleum and petroleum products, chemicals, transport equipments, edible oil, iron and steel, fertilizer, and tea. These eight categories of imports accounted for 75.2 percent of total imports during 2001-2002. Among these categories, machinery, petroleum and petroleum products, and chemicals accounted for almost 60.1 percent of total imports. Considerable structural changes have taken place in some categories of imports over the years. The share of machinery has declined on account of sliding investment, but during 2000-2001 and 2001-2002 its share has increased due to higher imports of power generating machinery, electrical and textile machinery and construction & mining machinery. The share of chemicals depicted a gradual rising trend, while that of petroleum and petroleum products picked up, mainly on account of rising domestic demand and higher international prices. Pakistan currently imports two thirds of its total requirement of fuel oil, and at the projected consumption rate, is poised to become one of the largest importers of fuel oil in the Asia-Pacific region by 2005.[33]

C. SHIPPING INDUSTRY AND ECONOMIC DEVELOPMENT

Shipping and economic development are increasingly linked. The health of the shipping industry is therefore of great importance not only to the major shipping nations but to all nations.[34] The nations of the world rely more heavily and trade linkages increasingly foster global interdependence. Shipping services are essential for international trade, because over 90 percent of all international trade measured in weight and volume, is transported by water.[35] Lovett argues that there is strong relationship between growth in trade and a healthy merchant marine.

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[33] Hassaan Vahidy, Fereidun Fesharaki, "Pakistan's Gas Discoveries Eliminate Import Need," *Oil & Gas Journal Tulsa,* 28 January 2002.

[34] Ernest Gabriel Frankel, *The World Shipping Industry* (London: Croom Helm Publishers, 1987), xi.

[35] Sam J Tangredi, ed. *Globalization and Maritime Power,* (Washington D.C.: National Defense University Press, 2002), 3.

> In most successful nations there has been a commitment to maritime policy as part of a strong trade policy. A healthy merchant marine promotes successful exports, profitable trading ventures, and a national outreach to get the best available products and technology. In contrast, to rely mainly upon foreign vessels, traders, suppliers, and manufactures leads to passivity in external relations and under-achievement. As economies become sluggish, inward looking, they typically reduce their savings and investment; they neglect their industry and productivity potential, and erode their competitive vitality in world markets. [36]

The world merchant fleet stood at 844.2 million tons as on 1 January 2003, representing a 2.3 percent increase over 2002.[37] Despite its enormous technological evolution, the shipping industry continues to provide efficient and low cost transportation, which is generally assumed to be a necessary condition for the maintenance and expansion of trade. Coal and oil cost little more in the mid-1990s than in the late 1940s.[38] In addition there is a symbiotic relationship between transportation and trade. Contrary to the general belief that transportation is derived demand depending on trade, an increasing number of trades in developing countries are in part derived from efficient, low-cost transportation.[39]

The historical importance of merchant marine under national flag as an essential constituent of maritime power that enabled the state to ensure continuance of its trade, earned profits, created wealth and provided employment cannot be overemphasized. However, maritime strategists argue that developed countries have over the period of time deliberately acquiesced to a catastrophic decline of their merchant marine.[40] The continued decline in the status of merchant shipping in developed countries, which facilitates 97 percent of world trade and consumes only 3 percent of world energy, is because of the fact that shipping has lost its constituency leading to an erosion of political

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[36] William A. Lovett, "Realistic Maritime Renewal," in *U.S. Shipping Policies and the World Market* ed. William A. Lovett (Westport: Quorum Books, 1996), 317.

[37] "Review of Maritime Transport, 2003", UNCTAD Secretariat, United Nations, New York and Geneva, 2003, 19.

[38] Stopford, *Maritime Economics Second Edition*, 4.

[39] Frankel, *The World Shipping Industry*, 110.

[40] Hill, *Maritime Strategy for Medium Powers*, 31.

and economic support. This explains the declining trend of the shipping industry in developed countries and the institution of neglectful and shipping-hostile policies.[41] These rigid and unfriendly policies are partly responsible for the drastic decline in the British fleet from 1,614 ships in 1975 to 272 ships in 1993.[42]

The contrary is believed to be true in the developing countries, which regard a sizeable and flourishing merchant marine as something good. This is despite the fact that shipping is a highly capital intensive industry, with a lot of risk involved to considerable fluctuations in demand and volatility in freight rates.[43] The present share of developing countries in the total world tonnage is about 20.3 percent, out of which Asian countries own 74.1 percent.[44] Developing countries have grown more rapidly than those of the rest of the world and have consequently become even more dependent on trade. They are particularly dependent on trade with industrialized countries because of their need to market raw materials, agricultural products, and low technology manufactured products, as well as to import industrial goods. The proportion of freight charges for developing countries is generally higher vis-à-vis developed countries. Many developing countries blame the disproportionate share of international seaborne trade for the high freight rates charged to their trade.[45] This is partially because of the lower trade volume generated by developing countries. As the average unit value of their trade is lower than that of developed countries, and the average cost of transportation per unit of cargo is usually higher, the percentage costs of transport in developing countries international trade are generally higher than those assumed by developed countries. Consequently, the developing countries spend over twice as much as or in some case over three times the amount spent by developed countries for transportation of international trade as

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[41] N. Shashikumar, "World Shipping Competition," in *U.S. Shipping Policies and the World Market* ed. William A. Lovett (Westport: Quorum Books, 1996), 72.

[42] Ibid.

[43] Harald Hansen, *The Developing Countries and International Shipping*, (Washington: World Bank Staff Working Paper No. 502, 1981), iv.

[44] "Review of Maritime Transport, 2003", UNCTAD Secretariat, United Nations, New York and Geneva, 2003, 27.

[45] Frankel, *The World Shipping Industry*, 110.

percentage of the value of their trade.[46] To reduce the cost of their own trade, developing countries attempt in the participation of shipping their own trade. Before studying the shipping scenario in Pakistan, it would be prudent here to analyze why developing countries in general invest in shipping and what are potential positive and negative effects of doing that.

1. Potential Positive Aspects of Investment in Shipping Sector by Developing Countries

Developing countries' investment in shipping industry is generally based around five main reasons: saving foreign exchange, reducing freight cost and thus promoting the country's foreign trade, reaping the benefit from profitable shipping operation, providing added employment, assuring adequate and reliable shipping services.[47] The potential for avoiding substantial foreign exchange payments for maritime freight is often given by the developing countries as one important reason for investments in ocean-going shipping. Although the countries may achieve gross foreign exchange savings, the net savings from the national point of view will be significantly less depending on number of factors. These factors include: [48]

- The type of vessels involved and their age and cost structures under national and foreign flag;
- The extent to which the vessel is acquired from abroad and the financing arrangements;
- The extent to which the national resources are used in its operation (crew, management, repair facilities etc.);
- The operating efficiency and level of profitability;
- The impact of freight rates;
- And the general conditions on the particular trade routes in question.

The potential for bringing about lower freight charges and/or improved service is another reason cited for developing countries' investment in shipping. The existence of

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[46] Ibid., 111.

[47] Hansen, *The Developing Countries and International Shipping*, 26.

[48] Ibid.

national flag vessels may reduce the costs on particular commodities or may help avoid or modify freight increases; the opposite is also true if national flag vessels are not operated efficiently. Efficient shipping operation has the potential to earn revenues, which is another reason why developing countries want to invest in shipping industry. The keyword here is efficient because in case of inefficient operation, shipping companies of developing countries have known to be earning marginal returns or losing money.

Although the modern shipping provides little employment opportunities, it can have a great impact on employment generation through spin-off factors and linkage effects with trade. Modern ships are increasingly becoming automated with much lesser manning requirements. The over-manning of ships in developing countries offsets the advantage of low wages and increases overall the operating costs. On the contrary investment in shipping has the potential to create employments in labor-intensive sectors like ship repairing, shipbuilding and other onshore jobs. The extent of these economic linkages depends on how far shipping is planned as an integral part of the economy. Moreover the investment in national flag vessels for overseas trade may result in lowering freight cost, which could result in a multiplier effect of increased exports and increased employment opportunities in production of the commodities concerned.

The availability of shipping services to meet part of a country's foreign trade needs in case of war or other emergencies has been a consideration for development of many national merchant marines. In addition, during the period of high worldwide demand and increased freight rates, the developing countries with small trade volume might find the availability of shipping services greatly reduced. National defense considerations have been yet another reason for development or expansion of national merchant marines.

2. Potential Negative Aspects of Investment in Shipping Sector by Developing Countries

There are a number of factors, which may affect the potential benefits of developing countries from shipping investments. However, they are not always counterproductive and do not restrict the developing countries in investing in shipping

sector.[49] Shipping is a highly capital-intensive industry with modest direct employment creation effects. This is particularly true for modern vessels such as container ships and large bulk carriers. These vessels with lower costs, reliable fuel-efficient machinery and negligible maintenance cost less to run. The requirement of capital often forces the developing countries to look for less expensive alternatives. In some cases the need of capital may be reduced by using second-hand vessels, or by using leased or chartered vessels. However, day-to-day cash costs are higher for old ships with ageing machinery requiring constant maintenance, a rusty hull requiring regular steel replacement and high fuel consumptions. In fact operation and maintenance costs of older ships in developing countries' merchant fleets outweigh often their margin of earning a profit.

Shipping is generally considered a risky business. Adjustments to decrease in demand and fluctuation in freight rates can seriously affect the profitability of shipping companies. If the growth in shipping is proportionate to or a little less than the growth in international trade, the shipping industry makes good profits. However, if the world shipping exceeds the growth in international trade, it leads to reduced business for shipping companies, increased competitiveness, and lower freight rates. Forecasting in shipping industry is highly unpredictable and speculative. Stopford relates shipping to the game of poker, where the players must know the rules. However, "winning at shipping game, like poker, also depends on probability, strategy, psychology and luck."[50]

Open registry shipping using crews from other developing countries or low-waged developing countries may offset the potential comparative advantage, which some developing countries may have in shipping. Moreover, the fact that some developed countries directly or indirectly subsidize their shipping industries, which therefore offer lower freight rates, can have a negative effect on the shipping investment in developing countries, but at the same time it favors trade by lowering freight rates.

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[49] Ibid.

[50] Stopford, *Maritime Economics Second Edition*, 38.

D. SHIPPING INDUSTRY IN PAKISTAN—A TROUBLED HISTORY

1. Historical Background

History of shipping industry in Pakistan is a sad saga of lost opportunities. It started with an optimistic note and progressed well till the mid 1970s. Thereafter it stagnated for a while before continuing on a downward slope, which remains unchecked. At the time of independence, Pakistan's merchant marine fleet comprised four small sized ocean going ships which increased to 14 in 1950 and reached 71 prior to separation of East Pakistan in 1971.[51] In the sixties, the government of the day pursued progressive policies, which facilitated Pakistan in successfully achieving its maritime capabilities. East and West Pakistan home trade acted as a catalyst to profitable ship owning. Karachi Port was considered as one of the best ports east of the Suez. Hundreds of foreign vessels in a year used to anchor at the Port of Karachi for repairs and maintenance. The government and the country earned sizable foreign exchange and international goodwill. The Karachi Shipyard was booming, and there were dozens or more well established marine repair workshops that employed hundreds of skilled labors and imparted apprentice trainings.[52] After the fall of East Pakistan in 1971, the coastal trade between the two wings finished and the national merchant marine had to compete internationally. Even before the industry was able to recover from the first shock, in 1974 the government nationalized most of the privately owned industries. It was perhaps the single most damaging economic decision in the history of Pakistan economy. The shipping industry, like most other major industries could not escape the change in policy. It was a major setback, which ended a healthy competition between the public and private shipping sectors.[53] The traditional ship owners disappeared from the scene ever since and have yet to make a comeback.

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51 Sheikh Muhammad Iqbal, "Shipping in Pakistan," *Pakistan and Gulf Economist* (September 27—October 2, 1999), http://www.pakistaneconomist.com/issue1999/issue39/i&e5.htm (21 June 2004).

52 Munir I. Millwala, "Shipping: The Key Issues," *Pakistan and Gulf Economist* (19-25 July, 1999), http://www.pakistaneconomist.com/issue1999/issue29/i&e3.htm (21 June 2004).

53 Regional Seminar on Liberalization of Maritime Transport Services under WTO GATS, Country Report Pakistan available at http://www.unescap.org/tctd/nvg/wtogats2002files/pakistan_wtogats.pdf (7 May 2004).

The government-owned Pakistan National Shipping Corporation, which was formed in 1979 when Pakistan Shipping Corporation and the National Shipping Corporation were merged, has mostly remained a financially troubled organization despite enjoying absolute monopoly in the shipping sector.[54] First, public owned enterprises are inherently inefficient. Secondly and most importantly in the absence of competition from the private sector, it had no urge to be efficient. There had been a steady decline since the last two decades from 54 ships (518,000 deadweight tonnage) in 1982 to 13 vessels with deadweight tonnage of 229,579 tons in 2002-2003.[55] The corporation has recently acquired three oil tankers for transportation of its crude oil requirements. The latest figure stands at 14 vessels with deadweight tonnage of 470,326 tons.[56] During the period from July 2003 to March 2004, the shipping corporation earned revenue of Rs4.602 billion.[57] According to the country report on Pakistan (2002) published by the United Nations Conference on Trade and Development (UNCTAD) the national flag carrier of Pakistan (PNSC) handles only 5 percent of seaborne cargo which is far less than the minimum required figure of 40 percent.[58]

2. Pakistan's Economic Compulsions

Pakistan has a potential for substantial net foreign exchange savings from shipping because of the size and nature of its trade and resource situation. The annual freight bill to foreign shipping companies was estimated to be around $1.3 billion in 2002, which is a significant drain on the country's foreign exchange considering the size of Pakistan economy.[59] This figure is likely to increase because of the present surge in

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[54] Syed M. Aslam, "Shipping," *Pakistan and Gulf Economist* (23-29 July, 2001) available at http://www.pakistaneconomist.com/issue2001/issue30/cover.htm (18 April 2004).

[55] "Merchant Fleets of the World", US Department of Commerce Maritime Administration, November 1983 and Economic Survey 2002-2003 Government of Pakistan, http://www.finance.gov.pk/survey/chapters/14-transportpercent20communication.pdf (18 April 2004).

[56] Pakistan National Shipping Corporation Website, http://www.pnsc.com.pk/profile.html (18 October 2004).

[57] Economic Survey 2003-2004, Government of Pakistan, http://www.finance.gov.pk/survey/chapters/14-transport%20communication.pdf (10 Setember 2004).

[58] Regional Seminar on Liberalization of Maritime Transport Services under WTO GATS, Country Report Pakistan available at http://www.unescap.org/tctd/nvg/wtogats2002files/pakistan_wtogats.pdf (7 May 2004).

[59] Ibid.

economic growth and the subsequent increase in the trade volume. The gross saving in case of national mercantile marine may not be significant as contested by some scholars but the prospects of saving the hard-earned foreign exchange for an economy like Pakistan cannot be overestimated. This is especially because of the fact that the annual freight bill is termed as the second highest expenditure after the debt servicing and defense.

There is enormous growth potential for national shipping industry. At present, less than 5 percent of Pakistan's total trade is being carried by the national mercantile marine, which is far less than the 40 percent share allowed to be transported on national merchant fleet outlined by the UNCTAD convention on code of conduct for liner conference.[60] Considering the rapid growth in trade in the recent years and the present stagnation of the shipping industry, the total share of trade transported by the national shipping industry is going to shrink further and the country would be more dependent on foreign shipping for transportation of its trade. Conversely this also means that there exists an even greater growth potential for investment in the shipping sector.

The modern shipping industry does not generate many employment opportunities on board but there is a definite potential of on shore employment created by investment in shipping industry. The unhealthy state of national mercantile marine is cited as one reason for increasing idleness of Karachi Shipyard and Engineering Works, which was a booming industry during 1970s when it received repair/maintenance and new shipbuilding orders from the domestic shipping industry.[61] Growth and development of national mercantile marine would help revive the shipbuilding and repair industry, which is otherwise laying idle and burdening national resources. Moreover, investment in shipping industry is related to development of other services industries like marine insurance, ship finance organization, ship classification services, marine telecommunication services, marine training institutes and ship provisioning services.

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[60] "UNCTAD Convention on a Code of Conduct for Liner Conferences," http://www.admiraltylawguide.com/conven/liner1974.html. (18 August 2004).

[61] Syed M. Aslam, "Shipping," *Pakistan and Gulf Economist* (23-29 July, 2001), http://www.pakistaneconomist.com/issue2001/issue30/cover.htm (17 May 2004).

All of these activities tend to be more labor-intensive, which means increased employment opportunities in these sectors.

Pakistan has an environment that offers comparative advantage for investment in shipping sector such as maritime and naval background, well-established training infrastructure for merchant marine officers and ratings, an appropriate institutional framework to manage the industry, and significant economic linkages to make possible efficient and economical operation of national flag vessels in its foreign trade; all of which are considered as conducive conditions for investment in shipping sector.[62]

The potential of profitable shipping operation to earn foreign exchange for the country is yet another consideration investment in shipping sector. However, this is difficult to realize without the effective participation of private sector. Pakistani ship owners in the private sector were badly discouraged by nationalization policy of the government and absolute monopoly of public sector in shipping industry till early 1990s. Most of them moved to invest elsewhere in the World. This is evident from the fact that Pakistani businessmen owned 63 open-registry ships in 1984 with total tonnage exceeding 1.75 million tons.[63] Whether or not Pakistani businessmen will be interested to bring their ships under Pakistan flag depends on the government's ability to rebuild the lost trust and provide adequate incentives to invest.

Investment in shipping can help reduce the balance of payment deficit. The improvements in balance of payment by shipping the cargo on national mercantile marine can be realized in two ways. First, by transporting own exports to foreign countries would mean the earning of foreign exchange. Second, the country would not be required to pay foreign exchange to foreign ships as freight charges for its imports. This may be viewed in light of higher freight charges paid by developing countries on average as compared to developed countries mainly because of less trade volume generated by these countries. Inadequacy of merchant marine in Pakistan to protect domestic trade is a vulnerability, which is often exploited by foreign shipping companies. Foreign carriers

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62 Hansen, *The Developing Countries and International Shipping*, 53.

63 Frankel, *The World Shipping Industry*, 100.

monopolize the freight rates at their whim and the exporters are left with no option but to accept higher freight rates, which makes their products internationally uncompetitive. The most recent example is the decision of foreign shipping lines to increase freight charges after a deal for rice export to Sri Lanka was made public. The freight charges were raised from $250 to $325 per ton from Karachi to Colombo.[64]

The development of Gwadar deep-sea port is yet another reason for investment in national shipping industry for two reasons. It has the potential to boost transit trade emanating from Central Asia and Afghanistan, and it can introduce some sort of potential for coastal shipping between Karachi and Gwadar. In the long term, Pakistan plans for Gwadar Port to emerge as a major transshipment port in the region. Apart from other benefits that such a proposition brings along, it would generate the need of niche or feeder shipping services to serve secondary ports in the region. Pakistan can benefit from such a prospect by developing its own shipping industry to capture this market in future.

3. Pakistan's National Security Compulsions

The availability of shipping services to meet country's foreign trade needs in war or other emergencies has been a consideration in development of many national merchant marines. Though the national defense considerations fall outside the normal economic evaluation, they had been a very important consideration in development or expansion of national mercantile marines, for example in case of the United States, Israel and Korea.[65] The security compulsions of Pakistan vis-à-vis its needs to develop its national mercantile marine are related to its geopolitical situation and continued animosity with the neighboring India. Disruption or discontinuity of its foreign trade may not only have adverse effects on the economy, it is equally detrimental to country's national security and its war fighting capability. Deteriorating political conditions between the two neighbors has unfortunately being a recurring phenomenon in the recent past. A heightened state of tension or an all-out war can seriously affect the seaborne trade of Pakistan due to its heavy reliance on foreign shipping. The two most probable outcomes

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64 *Dawn* (Karachi), 12 October 2004, http://www.dawn.com/2004/10/12/ebr10.htm (12 October 2004).

65 Frankel, *The World Shipping Industry*, 42.

shall be discussed here in some detail. First, a war in the region or a heightened state of tension can deter neutral foreign shipping from plying in a war prone zone. This may result in denial of essential services for transportation of country's trade. The national mercantile marine in its present shape may find it increasingly difficult to meet country's transportation requirements.

Second, is the issue of increased insurance premiums for all cargo destined to or from a war zone. Marine insurance is mainly divided into three categories; hull and machinery, cargo, protection and indemnity. Hull and machinery policies protect the interests of ship owners against physical loss and damage, cargo policies protect the interests of cargo owners, and protection and indemnity protect ship owners from liabilities their vessels have incurred. In case of war or heightened tension in the region additional war risk premium is imposed. This was witnessed during the United States' attack on Afghanistan in 2001 and again during the Iraq war in 2003. Despite the fact that Pakistan was not involved in the conflict, its mere proximity to the region was sufficient justification for shipping companies to subject all cargo to and from the country to additional war surcharges. For example after 1 April 2003, a war risk premium to the tune of $25 for a 20-foot container and $50 for a 40-foot container were imposed.[66] As insurance costs are an in-built part of all foreign trade, the levy of war risk premium in case of war or escalated tension in the region, may take an extremely adverse toll on the economy of the country by pushing the shipping costs unacceptably high and making the exports uneconomical. This has serious implications for a country like Pakistan with relatively fragile economy and overwhelming dependence on seaborne trade. The situation becomes graver if we consider such a situation leading to 'economic strangulation,' which is defined as one of the thresholds that would (or could) lead to Pakistani nuclear retaliation.[67]

4. Achievements and Challenges

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[66] Syed M. Aslam, "Impact of War on Foreign Trade," *Pakistan and Gulf Economist* (31 May -06 April, 2003), http://www.pakistaneconomist.com (12 October 2004).

[67] Rodney W. Jones, "Is Nuclear Deterrence Feasible?" 22-26 February, 2002, http://www.ceip.org/files/projects/npp/pdf/stablenucleardeterrence.pdf (15 July 2004).

After almost three decades of neglect, and continued inefficiency of government owned shipping sector, there is now a realization amongst the policy makers in Pakistan that the government alone cannot effectively meet the requirements of shipping sector because of its financial constraints and the capital intensive nature of the industry. Without effective participation by the private sector there can be no serious development in shipping industry. Considering these aspects, the present government formulated a new Merchant Shipping Policy with the guidance and inputs of public and private sector experts and professionals as well as other stakeholders. The basic aim of this policy is to attract investment in this vital field through a predictable environment, and offering concrete incentives, assurances, easy rules, regulations and procedures. Broad objectives of the policy stipulated by the government are reproduced below.[68]

- To encourage Pakistan flag carriers in private sector;
- To create a conductive environment that would help in the growth of the maritime sector;
- De-regulate by providing a free environment for investment;
- Enhance competitiveness of country's merchant marine fleet through induction of new vessels and efficient marine services;
- Ensure efficient operation of country's ports, harbors and related services according to international standards;
- Augment foreign exchange earnings by increasing the capacity of national flag carriers; thus reducing the present foreign freight bill;
- Expand and upgrade Pakistan merchant fleet to increase the present share of cargo from 5 percent to 40 percent by year 2020 to meet the United National Conference on Trade and Development criteria;
- Upgrade the human resource development facilities as per International Maritime Organization (IMO) conventions to train Pakistani mariners in accordance with international requirement;
- To revive our shipbuilding industry and expand it to cater for at least 20 percent shipbuilding and 50 percent repair and maintenance needs of the National fleet;
- The policy also proposes that ship owners of any trading vessel either bareboat or chartered under Pakistani flag be exempted from import duties and surcharges up to the year 2020;
- Shipbuilding and ship repair be classified as category "A" industry and entitled to all incentives contained therein;

[68]Regional Seminar on Liberalization of Maritime Transport Services under WTO GATS, Country Report Pakistan available at http://www.unescap.org/tctd/nvg/wtogats2002files/pakistan_wtogats.pdf (7 May 2004).

- In lieu of income tax; a tonnage tax @ $1.0 gross ton per annum irrespective of profit or loss be charged from the ship owners;
- Ports to provide 10 percent reduced rates for all vessels berthed for repair and maintenance;
- Ports will give equitable treatment to ships/crafts owned by private sector for berthing and use of other port facilities at par with public sector vessels.

The new policy was generally considered to be business-friendly and it was widely believed that successful implementation of the policy would hopefully generate considerable economic activity and attract private sector investment in the shipping industry. However, even after two years the response is anything but promising. A number of reasons are responsible for this cold response. First, announcing a good policy is one thing but it is the implementation that really matters. This is not the first time that the government has announced a shipping policy to invite private investors. The shipping sector was first deregulated in early 1990s and it was partially successful in attracting private sector investment. A number of applicants with plans to establish shipping companies were granted permission by the then government. But the pace of investment from the private sector remained markedly slow. Only a few companies were registered having two to three ships only. Much progress in this direction could not be made because the investment required to be mobilized by the private sponsors was understandably very sizeable while loan facilities were hardly available from the development financial institutions (DFIs), and foreign investment interest also largely kept to the side lines. At the same time, the local sponsors were also discouraged by certain mandatory requirements in the policy. Moreover, relatively high rates of import duty on ships combined with other conditions, which were not acceptable to the investors, prevented private investors both local and foreign, from participating in the development of shipping industry.[69]

Subsequently, in 1998 the government announced another shipping policy, which again failed to attract private investment. Restoring the trust of business community to reinvest in shipping industry after what it was made to suffer in previous years would

[69] Shamim Ahmed Rizvi, "New Measures in the Shipping Policy," *Pakistan and Gulf Economist* (22-28 April, 2002) http://www.pakistaneconomist.com/issue2002/issue16/i&e4.htm (19 May 2004).

require sincere efforts and profound assurances from the policy makers to provide a level playing field and a business friendly environment. A clear deviation from the stated policy of evenhandedness by the government is the controversial 10 years contract awarded to PNSC for import of crude oil, which was concluded while the new shipping policy was being finalized. The private sector was kept in dark and hence could not compete for the deal.[70] While such favoritism may temporarily provide relief to the ailing shipping corporation in the short term, it would prove detrimental to the objectives outlined in the new shipping policy and would not be helpful in restoring the confidence of private sector.

Pakistan may consider creating a separate ministry for shipping, as is the case in neighboring India. At present import requirements of various ministries are processed in individually with no central management. It is important to coordinate the shipping requirements of various ministries. The centralization would help coordinate shipments of various commodities to ensure timely shipment at most economical rates for the overall benefits of the local people and the local shipping sector. Moreover, Pakistan will have to remove the bureaucratic snags that unnecessarily impede legitimate business concerns of private investors. The bureaucracy in Pakistan can hardly be termed business friendly. Instead of providing efficient services, people are made to suffer inordinate delays, which is something the business community can afford the least. It often leads to corruption and reduces the margin of profitability of private investors. The government must make serious efforts to revamp the bureaucratic structure and make it more conducive and business friendly.

In order to achieve success in the shipping sector the government has to make owning a ship under Pakistan flag almost as profitable a venture as it could be anywhere else in the open registry countries, because that is where most of Pakistani ship owners moved after repressive policies adopted by the government. Attracting the business community back would require offering great incentives to a profitable business and their right to make legitimate profit. In fact no country, no matter where, progressed only

[70] *Dawn* (Karachi), 29 April 2002, http://www.dawn.com/2002/04/29/ebr7.htm (20 October 2004).

when its private sector engaged in the trade received the recognition and the right to make legitimate profits was duly acknowledged and accepted. In such countries the government provided the opportunities for the private sector to capitalize and make the business a viable enterprise, which subsequently generated growth and development. While protectionism and reservation of government owned cargo for national flag carriers is a universally acceptable phenomenon in the shipping industry, the government must ensure that both public and private owned shipping companies are treated alike with no preference whatsoever to be given to the public entity. Any disparity to prioritize state owned corporation over private sector would be counterproductive. The same level of protectionism and subsidies to all private investors with respect to secure export cargo is almost essential to attract investment. This aspect is absolutely crucial for any serious attempt to attract private investment in shipping sector.

To improve the condition of state owned Pakistan National Shipping Corporation, the government would drastically need to cut non-productive expenditures and make the organization into a lean and efficient commercial organization. An organization with continued financial difficulties and decreasing fleet could hardly afford to sustain top-heavy management. The corporation needs to concentrate on more profitable routes and update its existing fleet. Instead of opting for preferential and ad hoc measure, the government must devise a long-term strategy for making the organization more profitable. Sustaining the organization at the expanse of taxpayers, which are made to pay higher prices for fuel because the national shipping corporation is charging exorbitant freight charges,[71] is definitely not a productive long-term strategy.

E. CONCLUSION

Integration into the global economy is fundamental to economic development and in this era of globalization world economies have increasingly become dependent on international trade. The sea provides the cheapest means of communication, which explains why over 90 percent of international trade is routed through the sea. The role of shipping industry is crucial in supporting the growth of international trade by providing

[71] Ibid.

an efficient and cost effective means of transportation. Due to its geography and the geo-political situation in the region, Pakistan is heavily dependent on sea for its international trade. The sea carries over 95 percent of Pakistan's trade, which is approximately 36.3 percent of its GDP. However, despite such heavy reliance on seaborne trade, Pakistan's shipping industry has remained neglected in the past. The shipping industry in Pakistan started off at a good note and moderate growth was witnessed till early 1970s. Thereafter it suffered because of the dismemberment of East Pakistan in 1971 followed by the unwise economic policies of the government in mid 1970s. Nationalization of the shipping industry was a major blow, which scared away private investors and subsequently the nationalized shipping corporation continued on a downward trend mainly because there was no competition from the private sector. The downward trend has so far continued unabated.

Development of shipping industry is important for Pakistan both in terms of economic growth and national security. A healthy shipping industry can save foreign exchange expended on freight charges, earn additional revenues, provide added employment opportunities, and most importantly protect and promote domestic trade from unfavorable rise in freight and insurance charges. In terms of national security, a well-developed national merchant marine reduces the dependence on foreign carriers, which may not assure continuous supply in case of war or heightened tension. This is especially relevant in case of Pakistan where national merchant marine transports only 5 percent of the total cargo and risk of a conflict with neighboring India in future remains a possibility. After decades of neglect, the government has realized that involvement of private sector is extremely important to achieve any meaningful development in the shipping industry. The newly announced Merchant Shipping Policy by the government is generally considered as a step in the right direction. The incentives announced in the policy were unprecedented in the shipping policies announced by the past governments.

However, it is important for the government to prove its sincerity vis-à-vis promulgation of the policy and protection of genuine interests of the business community in addition to creating a level playing field to attract the private investors. The response of business community has not been very warm and they are extremely cautious in

making a come back. This cautious attitude of private investors is understandable considering enormous capital investment requirements and the checkered history of the treatment meted out to them in the past. The government must make a thorough appraisal of the requirements of existing and potential investors and ensure that incentives offered are sufficient to inspire ideas of proportionate risk-taking. Moreover, the bureaucratic institutions involved in functioning of shipping industry must be made business friendly and the legitimate right of business community to make profit must be acknowledged if any serious investment is expected in this sector. The following recommendations are made with respect to the development of the shipping industry in Pakistan:

- The government must restore the lost trust of business community in order to attract investment in shipping sector. The government must demonstrate sincerity in promulgating the declared policy and its actions must not contradict the policy guidelines.
- The government must make a thorough appraisal of the requirements of existing and potential investors and ensure that incentives offered are sufficient to inspire ideas of proportionate risk-taking. The incentives offered should be equal to those offered elsewhere in the world especially in the open-registry countries.
- The right of private sector to make legitimate profit must be acknowledged and the government must ensure that both private and public sectors are treated equally. This should apply to award of any subsidies, special cargo allocation quotas, or award of contracts for transportation of cargo.
- The government should consider setting up of a separate ministry for the shipping industry for effective coordination of shipping requirements of various government agencies and for removing bureaucratic snags, which hamper smooth and efficient conduct of business activities.

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III. PORTS, SHIPBUILDING INDUSTRY AND EXPLOITATION OF OFFSHORE RESOURCES

A. INTRODUCTION

This chapter discusses the importance of ports, the shipbuilding industry, and the exploitation of offshore living and non-living resources as elements of maritime power. Each of these elements has its own significance for economic growth and national security of the country. Ports provide the link between the land and sea transports and act as a hub of economic activity in surrounding regions. In addition, they provide operating bases to naval forces. The economic viability of shipbuilding industry in the third world countries remains debatable, however, its importance in supporting both merchant and naval shipping cannot be ruled out. Optimum exploitation of offshore natural resources can contribute substantially to the economic growth and generate employment opportunities. Discovery and exploitation of offshore energy resources are important both economically and strategically because they can reduce the reliance on imported energy resources.

Ports are the essential link between the land transport and the sea transport. They not only provide space for loading and discharge of cargoes from the ships and earn revenue from the services rendered thereof, they are a catalyst of economic growth and hub of major economic activity in a region. Apart from the economic benefits generated by port activities, ports serve a strategic function of providing operating bases for the naval forces. Possession of a large number of bases offers greater flexibility to own and friendly naval forces for deployment. Despite an overwhelming dependence on seaborne trade, Pakistan has relied on two co-located ports at Karachi (Port Qasim can for all practical purposes be considered as an extension of Karachi port). The coastline west of Karachi remained devoid of a major commercial port complex for almost fifty years. However, the present government took the initiative to develop a commercial port at Gwadar, which was initially identified as a port site in 1964. The port is being built with Chinese assistance and the first phase would be fully operational by January 2005. Emergence of Gwadar port will reduce Pakistan's dependence on Karachi and generate

economic activities in areas that were badly neglected in the past. In addition, the development of Gwadar port will provide Pakistan an opportunity to benefit from the trade emanating from the land-locked neighboring states.

A national shipbuilding industry was regarded as an essential component of maritime power. The capacity to produce the operational units of both economic and military power at sea was generally considered a vast financial asset in peace and a strategic necessity in war.[72] However, shipbuilding industry has undergone major changes. There had been a rapid progression in size of the ships and other technological advancements accompanied by it. Moreover, shipbuilding has become a highly competitive industry and nations that once dominated the world shipbuilding market have seen catastrophic decline in their shipbuilding industries. From 1977 to 1995, the market share of European shipbuilders decreased from 41 percent to 17 percent, while the Far East shipbuilding industry dominated by Japan and South Korea grew from 46 percent to 75 percent in the same period.[73]

Pakistan had a modest shipbuilding industry, which has degenerated over the last couple of decades. At present, the industry is virtually lying idle and burdening the financial resources of the country. The deteriorating condition of the national merchant marine has adversely affected the shipbuilding industry, which has not received any shipbuilding order from Pakistan National Shipping Corporation since 1983. The last big ship built at Karachi shipyard was a 17,300 deadweight tons (dwt) vessel for china in 1992. The only support that the shipbuilding industry is getting is through some construction orders from the Pakistan Navy and limited maintenance jobs from the shipping industry. Despite its economic problems, Pakistan wants to retain this important capability because of strategic reasons. The prospects of its economic revival remain less optimistic in the near future. In the long-term Pakistan must explore the possibility of foreign (preferably Chinese) financial and technological assistance for revival of the shipbuilding industry.

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[72] Hill, *Maritime Strategy for Medium Power*, 33.

[73] Stopford, *Maritime Economics Second Edition*, 456.

Exploitation of offshore resources, both living and non-living, can have enormous economic potential for maritime nations. Pakistan has an exclusive economic zone of 240,000 square kilometers, which is characterized by distinctive oceanic phenomena, that produces rich fisheries, mineral, and hydrocarbon resource.[74] However, the marine resources of Pakistan have so far remained unexploited; and concerted efforts for oceanographic research are required to assess the real potential present in this region. The fishing industry in Pakistan contributes 1 percent of the GDP.[75] However, it is not very well developed to make the optimum use of available living resources in the EEZ. The fishing industry is providing employment opportunities to approximately 800,000 people along the coasts of Sindh and Balochistan.[76] Exploration of non-living offshore resources has progressed very slowly. However, with the announcement of new offshore oil and gas exploration policy in 2001, the government has been able to attract some foreign investment in this sector.

B. PORTS—ECONOMIC DEVELOPMENT AND NATIONAL SECURITY

1. Ports as Hubs of Economic Activity

A seaport is a place where each-way exchanges between land and sea transport regularly takes place.[77] Over the period of time, ports have undergone significant transformation. The first generation ports only acted as an interface between land and sea transport and were considered to operate in isolation from trade activities and had limited interaction with surrounding municipalities. The second-generation ports performed a broad range of functions and acted as transport, industrial, and commercial centers. In fact ports performed an important and fundamental part of the overall pattern of trade and transport. There was a closer relationship between the ports, their transport and trade partners and between ports and surrounding municipalities. The third generation ports are considered to be a product of global containerization. Ports have become dynamic

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[74] National Institute of Oceanography, Pakistan, http://www.niopk.gov.pk/intro-1.html (1 October 2004).

[75] "Pakistan: Poverty Reduction Strategy Paper," January 2004, IMF Country report No. 04/24, 50.

[76] Ministry of Food, Agriculture, and Livestock, Government of Pakistan, http://www.pakistan.gov.pk/food-division/informationservices/minfal-01.htm (3 October 2004).

[77] James Bird, *Seaports and Seaport Terminals* (London: Hutchinson & Co, 1971), 13.

nodes in the complex international production and distribution network.[78] The four principal roles of ports are:

- Provision of shelter from the elements. This arises when due to heavy seas and storm conditions, ships take shelter in the environs of a port and thereby seek safe anchorage.
- Cargo and passenger handling is the prime function of port, where ships can load or discharge their cargoes, and/or passengers.
- Support services for ships. This includes victualling, stores, bunkering, ship repair and so on.
- A base for industrial development. This involves the provision of industry and its infrastructure to facilitate the development of trade passing through the port.[79]

Ports are a great source of revenue generation. There are three main sources of income for a port: dues on ships, dues on goods, and charges for services rendered either to ships or to importers and exporters of goods. The most common basis for port charges on ships is net tonnage. Charges on goods vary according to whether they are imports or exports. Sometimes tariffs on exports are much reduced or they are even exempted to stimulate trade. Charges on goods may also vary according to the length of voyage, and according to their value per unit of weight.[80] In addition ports stimulate economic activity and setup of industrial estates in their proximity. Ports become part of the supply and demand chain of major industries. On the demand side, ports are sources of raw materials for industry; on the supply side the primary processing industries located in and around ports are sources for the secondary processing and manufacturing industries. Other reasons for the location of industries in and around port areas are that large amounts of low value raw material per unit of weight are uneconomic to transport long distances over land.[81]

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[78] A. K. C. Beresford et al., "The UNCTAD and WORKPORT Models of Port Development: Evolution or Revolution?" in *Maritime Policy & Management* April-June 2004, 94.

[79] Alan E. Branch, *Elements of Port Operation and Management* (London: Chapman and Hall, 1986), 2.

[80] Bird, *Seaports and Seaport Terminals*, 201.

[81] Ibid., 83.

With the push toward globalization and increased containerization of global cargo, which is expected to reach 70 percent of the world trade by value in 2010,[82] the revenue generation potential of ports has far exceeded beyond serving the domestic trade of a particular country. Daniel Y. Coulter argues, "in an era of economic globalization, ports are evolving from being traditional interfaces between land and sea to providers of complete logistics networks."[83] This is especially true for major hub or transshipment ports in the world, which earn huge revenues for host nations. However, not every port is suited to become a hub port. To qualify, a port must meet certain preconditions such as geographical location, ability to handle large ships safely, extent of terminal facilities, efficient container handling operations, availability of frequent feeder services with an appropriate geographical coverage and attractive cargo-handling charges. In addition, the port should have terminal facilities that enable quick turnaround time.

The growing economic opportunities are definitely not without growing challenges for the port planners because ports are subservient to the changes in shipping development and not the other way around. The most obvious impact of shipping development upon ports has been the increasing size of merchant vessels. The shipping companies are ordering ships, which are bigger and have larger carrying capacity. Today's mega ships with 6000 twenty-foot equivalent unit (TEU) capacity would look miniscule in front of the designed 12,000 or 18,000 TEU capacity ships. Such ships would be restricted because of their size to call only on mega ports, which are able to handle these ships with minimum turnaround time. The criteria defined by Coulter for such ports require minimum quay length of 330 meters (m), minimum draft of 15m without tidal windows, and minimum crane outreach of 48m.[84] The ports meeting the basic prerequisites would then need to ensure fast turnaround times for these ships to avoid the risk of losing the alliances and the many associated feeder connections. For ports not selected by the major shipping lines because of insufficient facilities to handle

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[82] Daniel Y. Coulter, "Globalization of Maritime Commerce: The Rise of Hub Ports," in Sam J Tangredi, ed. *Globalization and Maritime Power,* (Washington D.C.: National Defense University Press, 2002), 133.

[83] Ibid.

[84] Ibid.

such ships, the choice will then be to either invest heavily in an attempt to gain hub status or seek their market serving feeder trades that typically employ ships less than 4,000–TEU capacity.[85]

2. Development of Ports in Pakistan—Economic Opportunities and Security Challenges

a. Existing Port Infrastructure

Pakistan has about 1046 km long coastline on the Arabian Sea spreading from the Indian border to the Persian Gulf. At the time of independence, Pakistan inherited only one deep-water functional port at Karachi in the western half of the country. This port not only catered for the entire sea borne cargo of the country but also provided transit trade facility to land locked Afghanistan. With the increase in seaborne trade, the need was felt for another port to take off some load from the single port at Karachi. The establishment of Pakistan Steel Mill Project in 1970s added additional impetus to this need and finally the construction of a second seaport, Muhammad Bin Qasim, was started in mid 1970s. This port was completed and opened to shipping in 1990 and is in operation ever since. At present both of these ports serve 803,943 square kilometers of hinterland as well as offering services for landlocked Afghanistan. [86]

Karachi port handles about 75 percent of the entire national cargo. It is a deep-sea natural port with 11 km long approach channel to provide safe navigation up to 75,000 deadweight tons (dwt) tankers, modern container vessels, bulk carriers and general cargo ships. The Port has 30 dry cargo berths including two container terminals and three liquid cargo-handling berths. Eighty percent of the country's container traffic is handled at Karachi Port. There are two dedicated container terminals. Karachi International Container Terminal being operated by Hutchison Port Holdings handles 300,000 TEU containers per annum. Pakistan International Container Terminal has recently being completed with a capacity to handle 350,000 TEU containers per annum. This terminal was constructed on build, operate, transfer basis (BOT) under 21 year

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[85] Ibid.

[86] Pakistan Sector Assessment Review, Asian Development Bank, October 2003, http://www.adb.org/Documents/Studies/PAK_Sector_Assessment_Review/psar_2003oct.pdf (15 October 2004).

implementation agreement between the Karachi Port Trust and Premier Mercantile Services Private Ltd.[87] There are a number of smaller stevedoring companies that handle the remaining container traffic. In addition to providing livelihood to millions of people, Karachi Port is a major source of revenue generation. During the fiscal year 2003-04, Karachi Port Trust earned Rs9.270 billion showing an increase of 10 percent over the preceding year's income of Rs8.423 billion. The net surplus after meeting the expenditures was Rs4.258 billion. Total cargo handled in the same period stood at 27.8 million tons 27.8 million tons and the number of containers handled at the port increased to 824,753.[88]

Port Qasim is Pakistan's first industrial and multi-purpose deep-sea port situated 52 kilometers south east of Karachi in Indus delta region. The port is well connected to the hinterland through rail and road links. Port Qasim handles the remaining 25 percent of the total cargo and 20 percent of the container traffic. The port has a dedicated container terminal, Qasim International Container Terminal, which is being operated by P&O group of Australia. In addition the port has a dedicated Iron Ore & Coal Berth for exclusive use of Pakistan Steel Mills for handling raw material imports, a specialized oil terminal offering state-of-art facilities to tankers up to 80,000 DWT, and four Multi purpose berths.[89] Other than the government-owned steel mills, there are number of major privately owned industrial units being set in the port area. During the period from July 2003 to March 2004, Port Qasim handled a cargo volume of 11.2 million tons and earned an operating income of Rs1.616 billion. The net surplus after meeting the expenditures was Rs704.2 million.[90]

The close proximity of the two ports at Karachi to neighboring India has certain strategic implications for Pakistan. The overwhelming dependence on seaborne

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[87] International Finance corporation, Environmental Review Summary, http://ifcln101.worldbank.org/IFCExt/spiwebsite1.nsf/2bc34f011b50ff6e85256a550073ff1c/c5a9a62e7a1c921b85256c4f006e2c79?OpenDocument (10 October 2004).

[88] *Dawn* (Karachi), 29 July 2004, http://www.dawn.com/2004/07/29/ebr5.htm (20 October 2004).

[89] Board of Investment, Government of Pakistan, http://www.pakboi.gov.pk/bfacts/ports.html (10 November 2004).

[90] Economic Survey 2003-2004, Government of Pakistan, http://finance.gov.pk/survey/chapters/14-transport%20communication.pdf (12 September 2004).

trade and the reliance on the two ports situated right next to each other greatly simplify the enemy's problem and complicate the challenges faced by Pakistan's own naval planners, who have to protect over stretched sea lines of communication and thwart enemy's attempt to carry out a blockade. The successful attacks of the Indian Navy on shipping and port installations at Karachi during the 1971 war fully exposed the vulnerability of a single port complex. Realizing the problems posed by a single operating base, the Pakistan Navy eventually established another naval base at Ormara in the mid 1990s, situated approximately 120 nautical miles west of Karachi.

The development of these two ports was not able to keep pace with the growing trade volume. While the existing cargo handling capacity of the two ports, estimated at 42 million metric tons per annum,[91] may be just sufficient to handle the present trade volume,[92] it will be overstretched to efficiently handle the projected increase in trade volume. Both the ports are facing congestion due to draft limitation on vessels, inadequate berth capacity and shortage of unloading infrastructure and storage in the port area. The restriction on night navigation for large ships at Port Qasim remains a continuing problem because of which port operations are limited to daylight only.[93] Because of its geographical location, Pakistan always wanted to attract the trade emanating form land-locked Central Asian states and provide access to sea through its ports. Though the political situation in the region has hampered any meaningful progress in this respect, yet the existing port infrastructure at Karachi was inadequate to efficiently handle additional trade volume generated by these countries. This remains the driving force for Pakistan to build a deep-sea port at Gwadar, which is expected to act as a transshipment port for these countries via Afghanistan.

b. Gwadar Port—An Economic Gateway

Gwadar, a coastal town on Makran coast, is strategically located in close proximity to major shipping routes emanating from the Persian Gulf. The decision to build a deep-sea port at Gwadar is the realization of a plan envisaged a couple of decades

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[91] Ibid.

[92] The total trade volume for the year 2003 was approximately 41.5 million metric tons.

[93] Board of Investment, Government of Pakistan, http://www.pakboi.gov.pk/bfacts/ports.html (10 November 2004).

ago. The work on Gwadar Port has already started with the Chinese assistance and will be completed in two phases. The first phase, with an estimated cost of $248 million, was started in 2002 and is expected to complete in January 2005.[94] On completion of the Phase-I, the port will be able to handle bulk carriers of up to 30,000 dwt and container vessels of 25,000 dwt.[95] The first phase of the port includes construction of three multipurpose 602m long berths besides construction of a 4.5 kms long approach channel dredged from 11.5m to 12.5m. The port will also have a turning basin of 450m diameter and one 100m service berth. Related port infrastructure and port handling equipment and pilot boats, tugs, survey vessels are also included in the first phase of this project. The second phase of the project will be built at an estimated cost of $600 million and will comprise of additional 9 berths. This phase will be built on build operate own (BOO)/build operate transfer (BOT) basis and is expected to take 8-10 years depending on the active participation of the private sector. A number of road and rail network are planned to effectively connect the port with the hinterland. The 700 kms long Makran Coastal Highway linking Gwadar with Pasni, Ormara, and Karachi is in advanced stages of completion. Another regional linkage is the Gwadar Ratto-Dero motorway linking it with Indus Highway through Turbat, Awaran and Khuzdar. A rail link is also planned to connect Gwadar to Quetta and Zahidan. The existing runway at Gwadar airport is extended to 15,000 ft for operation of wide-bodied jet aircraft.

The economic opportunities brought about by the development of Gwadar Port are twofold. On the internal front, it would help developing a region that has remained neglected ever since independence of the country. In addition to providing additional economic opportunities to the local populace, which is mainly dependent on fishing, it would open the region for people across the country. A number of industrial units are planned to be constructed in vicinity of the port and along the coastal highway, which would attract investors, create job opportunities, promote tourism, and open new avenues for development in the neglected coastal region. The provincial government has

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[94] *Dawn* (Karachi), 4 October 2004, http://www.dawn.com/2004/10/04/top2.htm (4 October 2004).

[95] Board of Investment, Government of Pakistan, http://www.pakboi.gov.pk/News_Event/Gawadar.html#PP (12 November 2004).

approved a master plan for the development of Gwadar, which envisages development of about 18,600 hectares of land for this project.

Gwadar is already considered by some to replicate the momentous growth witnessed by Karachi, which has turned into the metropolis city of 14 million people from a population of 50,000 at the time of independence and serves as the economic capital of the country.[96] Another major benefit to Gwadar city, in particular, and the region in general is the development of socio-economic infrastructure. The government plans to construct modern healthcare facilities, schools, desalination plant, and improve the transportation sector.[97] Once developed, Gwadar port would also reduce the congestion on existing ports at Karachi.

The most important economic potential is, however, to attract the international trade of the Central Asian states in the short term and develop as a major transshipment port in the long term. In 2002 the total value of international trade by Afghanistan and the Central Asian states was $34.454 billion ($18.866 billion exports, $15.588 billion imports).[98] Proximity of Gwadar to the region, which is only 1200 kilometers from Turkmenistan, makes it one of the most suitable trade outlets to the World. Asian Development Bank has identified Gwadar as a potential port for greater economic cooperation in the region and is providing significant assistance for roads and related infrastructure for regional connectivity, through two major road projects to link Gwadar Port, through the Balochistan and NWFP road networks, to the borders of Afghanistan and on to Central Asia.[99] The Turkmenistan-Afghanistan-Pakistan Natural Gas Project is one such plan, which envisages the construction of a natural gas transmission pipeline of about 1,700 kms to transport 30 billion cubic meters of gas

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96 Sheikh Javaid, "Gwadar—The Dream City of South Asia," *Pakistan and Gulf Economist* (July 9-15, 2001)

97 *Pak Tribune*, 3 October 2004, http://www.paktribune.com/news/index.php?id=79349 (3 October 2004).

98 UNCTAD Handbook of Statistics, 20, http://www.unctad.org/en/docs//tdstat28_enfr.pdf (15 March 2004).

99 "ADB's Response to the Development Challenges Facing Pakistan," Pakistan Development Forum, Islamabad, 12-14 May 2003, http://www.adb.org/Documents/Speeches/2003/ms2003047.asp (17 November 2004).

annually from the Dauletabad gas fields in southeast Turkmenistan to consumers in Afghanistan, Pakistan, and possibly, India. The cost of the project is estimated at $3.3 billion and project implementation will take five years.[100] The plan envisages export of liquefied natural gas from Gwadar port in future. Pakistan also wants to attract the trade flow from Xinjiang province in western China and has formally offered its port facilities to China for trade with Middle East.[101] The distance between Xinjiang and Pakistani ports is far less than the comparative distance between this region and ports on east coast of China. The existing road infrastructure of Karakoram highway already connects Pakistan to Western China. Improvement in the existing road infrastructure and its linkage to Gwadar via Ratodero-Khuzdar road shall make it the shortest and most viable route providing sea access to Western China.

Development of Gwadar as a major transshipment port in the region can have a very significant impact on the economic growth of the country. The strategic location of Gwadar on the entrance of Persian Gulf, huge trade flow from the region, and the ever-present political volatility within the Persian Gulf; all favor the development of a major transshipment port at Gwadar. Once developed as a major transshipment port, Gwadar can turn around the economic outlook of the country. After the completion of second phase, Gwadar Port will be able to accommodate fourth generation container ships drawing 15.6 to 20 meters. Such development, however, is not without its challenges. The biggest challenge is the financial resources needed to make it a reality. Private sector investment is perhaps the most viable option, which is being pursued by the government of Pakistan. Yet another challenge is the inter-port competition offered by other major ports in Iran and other Gulf states, which would understandably not like to part with their share of transshipment trade.

c. Ports and National Security

Ports play an important role in the national security of the country by providing operating bases to its naval forces. The greater the number of bases, the

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[100] Technical assistance for the Turkmenistan-Afghanistan-Pakistan Natural Gas Pipeline Project (Phase II), December 2003, Asian Development Bank.

[101] *Dawn* (Karachi), 7 October 2004, http://www.dawn.com/2004/10/07/top4.htm (7 October 2004).

greater is the flexibility of naval forces to operate during peacetime and war. Reliance on single base, as was the case in Pakistan, limits own flexibility and simplifies enemy's problem. According to Velo:

> The possession of large numbers of bases offers significant advantages for deployment, maneuver, and redeployment of one's own fleet forces and the use of the most suitable bases for deployment and redeployment. It is invariably a bad thing to rely on the use of a single major base in wartime, because then one's own forces use the same line of operation for both attack and retreat. This in turns resolves the enemy's problem in the timely monitoring of the movements of one's own and friendly forces. The enemy can with relative ease operate against a fleet that uses a single major naval base in a given area of operations.[102]

The successful Indian Navy attack on naval and merchant shipping and port installations at Karachi during the war in 1971 bears testimony to this fact. Development of ports and naval bases west of Karachi has two strategic advantages vis-à-vis national security of the country. First, it provides added flexibility to the Pakistan Navy to operate from three different locations--Karachi, Ormara, and Gwadar. Second, it reduces the dependence on the two ports at Karachi situated closed to India.

d. Challenges

There are certain security challenges vis-à-vis the development of Gwadar Port, which needs to be addressed by the government at the earliest. The nationalist political elements in Balochistan are not very receptive of the ongoing economic changes and influx of people from other parts of the country. The resentment of the local populace and the political leadership is primarily because of the fear that most of the job opportunities would be taken up by people moving in from other parts of the country and the project itself will have limited or no effect on their socio-economic condition. Moreover, they also fear that a huge influx of people would create a demographic imbalance and make them a minority in their own hometown.

The nationalist parties have criticized the manner in which jobs are allegedly being outsourced to non-locals. In the past this resentment has led into violence leading to the death of three Chinese engineers in a series of explosions on 3 May 2004.

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[102] Milan N. Vego, *Naval Strategy and Operations in Narrow Seas* (Portland: Frank Cass, 1999), 61.

The most recent incident was two bomb explosions in the month of September 2004. The possibility of external involvement by anti-Pakistan forces cannot be totally ruled out. The Chief Minister of Balochistan has hinted at the involvement of Indian intelligence agencies in masterminding and financing political violence in the province. He alleged that "conspiracies are hatched against Balochistan by anti-Pakistan forces who do not want Gwadar port to become [an] economic hub in the region."[103] Understandably there cannot be any meaningful private investment if the internal security situation is not improved. The long-term solution is to give due consideration to the genuine concerns of locals and integrate the nationalist political parties in moving ahead with the development of Gwadar Port. Formation of a parliamentary panel to resolve the issue is a right step in this direction.[104]

C. SHIPBUILDING INDUSTRY IN PAKISTAN—AN UNCERTAIN FUTURE

1. Trend in Global Shipbuilding Industry

The domestic shipbuilding industry was once considered vital for its role in sustaining national merchant marine and the navy of a maritime nation. However, there has been a radical shift in the shipbuilding industry and a number of maritime nations have accepted "…dependence they would have never countenanced…, [which] is sometimes accompanied by catastrophic declines in their own shipbuilding industries."[105] For example, though the U.S. shipbuilding industry designs and builds the most advanced military vessels in the world, yet it is not competitive in construction of large commercial ships and its share in the global shipbuilding market is less than 2 percent.[106] The market share in shipbuilding industry of the Great Britain declined from 55 percent at the beginning of the twentieth century to just 1 percent in 1995.[107] The case of other European shipbuilding countries is more or less the same and together they accounted for

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[103] *Dawn* (Karachi), 31 August 2004, http://www.dawn.com/2004/08/31/top5.htm (9 October 2004).

[104] *Dawn* (Karachi), 30 September 2004, http://www.dawn.com/2004/09/30/top1.htm (16 October 2004).

[105] Hill, *Maritime Strategy for Medium Power*, 33.

[106] Col Virginia Closs et al., "Shipbuilding," http://www.ndu.edu/icaf/industry/IS2001/2001%20Shipbuilding.doc (6 October 2004).

[107] Stopford, *Maritime Economics Second Edition*, 457-459.

17 percent of the total production in 1995 as against 41 percent in 1977.[108] The Far Eastern countries of Japan and South Korea are the two dominant players accounting for more than two-third of total shipbuilding activity in the world. China is yet another country, which has gradually increased its share in the shipbuilding market to 7 percent and is world's third largest shipbuilder in terms of gross tonnage.[109]

2. Decline of Shipbuilding Industry in Pakistan

The case of Pakistan's shipbuilding industry is somewhat similar to the declining trend witnessed elsewhere in the world. Karachi Shipyard and Engineering Works (KSEW), the oldest heavy engineering works in the country, was established in 1957. It is a government owned organization and is fully equipped for shipbuilding, ship repairing and heavy/general engineering works. Karachi Shipyard has built over 400 vessels of various types and sizes not only for the country but also for many other nations in the region. It is fully equipped to build passenger and cargo ships, oil tankers, and bulk carriers of up to 26,000 dwt. In addition to ship construction, Karachi Shipyard has repaired over 4000 vessels, half of which were foreign flagships.[110] However, the industry is virtually lying idle for more than a decade now in absence of any shipbuilding order. The last commercial ship built at the yard was a 17,300 dwt vessel for China in 1992.

One of the major reasons for this decline is the collapse of domestic shipping industry, which is supposedly linked to the shipbuilding and repair activities. The only thing, which is keeping the industry alive, is the continued support from the Pakistan Navy. KSEW has been a partner in the construction mine counter measure vessel (MCMV), fast patrol boat, missile craft, floating docks and tugs for the Pakistan Navy. In absence of its core activity, the shipyard has diverted its attention to general engineering works and has undertaken a variety of engineering and structural works for oil refineries, storage installations and oil based industries as well as engineering

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[108] Ibid.

[109] William R. Hawkins, "How China Plans to Dominate the Shipbuilding Industry," http://americaneconomicalert.org/view_art.asp?Prod_ID=80 (19 October 2004).

[110] Syed M. Aslam, "Shipping: Can New Shipping Policy Revive the Industry," *Pakistan and Gulf Economist* (23-29 July, 2001)

workshops, and cement and sugar factories. However, such activities and limited support from the navy has not been able to make the industry financially viable. At present the industry is grossly underperforming and overburdening national resources for its continued existence. It was reported in September 2004 that organization had not been able to pay salaries to its employees for the last four months and a grant of Rs400 million was requested from the Ministry of Finance to pay the overdue salaries.[111] In 2002 the government approved the plan for privatization of Karachi shipyard,[112] which was subsequently shelved due to security reasons. The most recent development is the decision of the government to hand over the control of KSEW to the Pakistan Navy with the direction to steer the industry out of financial crisis.[113]

3. Why Pakistan Needs the Shipbuilding Industry?

Given the fact that shipbuilding industry in Pakistan has become financially unviable and unable to sustain itself, the question arises why should it be kept afloat when it is extremely difficult if not impossible for the industry to become competitive with its existing infrastructure? Even if it the industry is revived with massive investment, it is difficult to visualize how it would sustain itself in the longer run especially when there are no signs of immediate turnaround in the domestic shipping industry. Moreover, in its entire history, the decade of 1970s was the only time when the organization made a profit mainly because of foreign shipbuilding orders.[114] To compete in the global market, continued facility modernization and improved labor force productivity are required. Moreover the shipbuilding industry is dependent on experienced and skilled workers whose expertise has been developed over long periods and they need continued on job training to practice and improve their skills.[115] Lack of

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[111] *Dawn* (Karachi), 09 September 2004, http://www.dawn.com/2004/09/09/top10.htm (1 October 2004).

[112] *Dawn* (Karachi), 05 September 2002, http://www.dawn.com/2002/03/05/ebr1.htm (7 October 2004).

[113] *Dawn* (Karachi), 09 September 2004, http://www.dawn.com/2004/09/09/top10.htm (9 October 2004).

[114] Syed M. Aslam, "An Interview With Managing Director, KSEW," *Pakistan and Gulf Economist* (02-15 December, 2002)

[115] Col Virginia Closs et al., "Shipbuilding," http://www.ndu.edu/icaf/industry/IS2001/2001%20Shipbuilding.doc (6 October 2004).

productivity has impeded modernization of existing infrastructure at KSEW and severely depleted the skilled labor. Economic revival of the industry to become competitive regionally and/or globally is therefore not realistic—at least in the short term.

The only other reason why Pakistan should maintain the existing infrastructure is purely strategic. Shipbuilding industry is a strategic asset for Pakistan despite its financial difficulties. If the existing capability is totally lost today, it would be extremely difficult to resurrect it in future. The industry is crucial to support the efforts of the Pakistan Navy to indigenously build various types of warships and submarines with joint collaboration of foreign countries. The joint collaboration of Karachi shipyard and the Pakistan Navy in construction of MCMV, fast patrol boats, and missile crafts is a significant step forward in achieving some degree of self reliance in production of military ships. Karachi Shipyard has also contributed in the construction of *Agosta 90B* submarines, two of which have been built in Pakistan with French assistance. The proposed construction of the Chinese *F-22P* frigates at Karachi Shipyard not only would provide the much needed financial relief to the industry, it would also provide the technical knowledge for construction of larger warships.[116] The most important aspect in this regard is to maintain some sort of production continuity to maintain and improve the country's technical skills.

4. Strategy for Revival

The immediate concern of the shipbuilding industry is to receive work orders related to shipbuilding or ship repair activity and the protection of government in getting the job orders from public enterprises, which have started giving preference to foreign yards for their maintenance needs.[117] Government subsidies and protection in shipbuilding industry are instrumental in survival of the industry all over the world. For example, the *Jones Act* requires that all vessels operating between U.S. ports be U.S.

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116 *Dawn* (Karachi), 14 September 2004, http://www.dawn.com/2004/09/14/top3.htm (6 October 2004).

117 Syed M. Aslam, "An Interview With Managing Director, KSEW," *Pakistan and Gulf Economist* (02-15 December, 2002)

owned, U.S. operated, and U.S. built.[118] South Korea is alleged to have unfavorably subsidized its shipbuilding industry, which has become a contentious issue between the European Union and South Korea.[119] In the short term the government must ensure through some legislative action that state run maritime organizations like the Pakistan National Shipping Corporation, Karachi Port Trust, Port Qasim accord priority in giving all repair orders to the Karachi shipyard, which can efficiently be undertaken by the organization. Similarly orders for construction of new ships and other auxiliary crafts should be given to the domestic industry. Pakistan Navy must continue its role in supporting the industry and undertaking joint projects for construction of naval vessels in addition to its repair and maintenance needs.

The government does not favor privatization of the shipbuilding industry in Pakistan. However, the long-term revival of the shipbuilding industry and its economic viability is very difficult in absence of foreign technical and economic assistance. Cooperation with China, which is emerging as a major shipbuilding industry in the world, appears to be the most suitable course of action. The existing facilities may be offered to China for joint collaboration in the field of shipbuilding and ship repair. It may be done in a fashion similar to what Brazil did to emerge as a major shipbuilder. The Brazilian government struck a bargain with foreign shipbuilders and provided them a base replete with low costs, while the investors provided capital and technology.[120] The government should provide a base with low labor costs, and a protected domestic market. The industry may be jointly managed by the officials from two countries to ensure optimum efficiency. China can use the existing facilities to build smaller vessels up to 26,000 dwt needed to serve intra-regional trade and feeder container markets. If the proposed cooperation successfully takes off, then the existing facilities may be upgraded in future

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[118] Col Virginia Closs et al., "Shipbuilding," http://www.ndu.edu/icaf/industry/IS2001/2001%20Shipbuilding.doc (6 October 2004).

[119] "SOUTH KOREA: Europe Blames Shipbuilding Subsidies," *Oxford Analytica*, 17 June 2003, http://www.oxweb.com/daily_brief.asp?NewsItemID=92293 (28 October 2004).

[120] Daniel Todd, *Industrial Dislocation: The Case of Global Shipbuilding* (New York: Routledge, 1991), 205.

to undertake construction of larger ships and establishment of another shipyard at Gwadar Port may be considered for improved productivity.

D. EXPLOITATION OF OFFSHORE NATURAL RESOURCES

Increased human use and rise in population all over the world continue to put additional pressure on existing resources and the struggle for the search of new resources remains an unending process. The problem of resource constraints is more pronounced for third world countries like Pakistan, where the strain on resources grows much more rapidly because of the unchecked population growth. Sea provides alternate medium for extraction of resources and has always played a significant role in sustaining human life. Exploitable resources from the sea are divided into living and non-living, or renewable and non-renewable resources. Both living and non-living resources can, in certain cases, enormously add to a state's economic power. Offshore fishing is a centuries old profession, which contributes largely to domestic economies and foreign exports of many coastal states. The exploitation of non-living resources is somewhat recent phenomenon but has made significant contributions to the economic power of many states. Oil and gas extractions remain the clearest examples of offshore exploitation of resources. More than a quarter of the entire world's oil comes from undersea installations.[121] Exploitation of non-living resources is not restricted to oil and gas but efforts have been made to extract a number of other minerals buried in the seabed.

Pakistan has an EEZ of approximately 240,000 square kilometers, the exact potential of which in terms of natural resources remains largely unknown because of inadequate scientific research. National Institute of Oceanography (NIO) was established in 1981 by the Ministry of Science and Technology to carry out research related to diverse fields of oceanic studies. The institute has limited resources to carry out extensive research that is required to optimally explore the natural resources in the EEZ. There is no dedicated oceanographic research vessel with the institute; however, it has access to the hydrographic cum oceanographic research vessel *Behr Paima*, which is mainly employed to carry out hydrographic research in the coastal areas. NIO has

[121] Hill, *Maritime Strategy for Medium Power*, 33.

conducted and completed a number of projects related to ocean research for marine industry and national institutions and maintains effective collaboration with international oceanographic organizations.[122] At present the exploitation of offshore natural resources in Pakistan is restricted to marine fisheries, which is an important economic activity in the coastal region.

1. Exploitation of Living Resources

Marine Fisheries industry contributes 1 percent of the GDP and is considered as one of the most important economic activity along the coastline of Sindh and Balochistan where the poorest communities of fishermen live. According to an estimate, the marine fisheries industry provides direct employment to 370,000 people and another 400,000 are employed in ancillary industries.[123] During the period July 2003 to March 2004, 101256 tons of fish and fishery products, valued at Rs7.9 billion, were exported to Japan, USA, UK, Germany, Middle East, Sri Lanka, and China. During the same period, the total fish production was estimated at 630,000 tons with 452,000 tons contributed by the marine sector.[124] Pakistan is exporting fish and fishery products in raw form i.e., either frozen, chilled, or dried. The margin of profit for value-added products as against raw exports is considerably more and this is identified as a potential area to make the fisheries sector more productive.[125]

Pakistan's EEZ largely remains unexploited because of inadequate fishing fleet and absence of detailed surveys to understand exact magnitude of the fishery resources. The activities of local fishermen are mostly confined within the territorial waters because their boats are not equipped with navigation facilities, electronic fish finding equipment, mechanical retrieval devices, and adequate storage facilities. According to Marine Fisheries Department of Pakistan, there are only 15 fishing vessels operating beyond

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[122] National Institute of Oceanography, Karachi, Pakistan, http://www.niopk.gov.pk/intro-1.html (6 October 2004).

[123] Ministry of Food, Agriculture, and Livestock, Government of Pakistan, http://www.pakistan.gov.pk/food-division/informationservices/minfal-01.htm (5 October 2004).

[124] Economic Survey 2003-2004, Government of Pakistan, http://www.finance.gov.pk/survey/chapters/02-Agriculture.PDF (12 September 2004).

[125] Ministry of Food, Agriculture, and Livestock, Government of Pakistan, http://www.pakistan.gov.pk/food-division/informationservices/minfal-04.htm (5 October 2004).

territorial waters in a zone extending from 12 to 35 nautical miles offshore and there are none operating beyond 35 nautical miles.[126] This limitation of fishing fleet amply explains the extent of unexploited potential within the EEZ. In 2001, the government announced a revised deep sea fishing policy with two broad aims:[127]

- To enhance the foreign exchange earnings through an increased export of fish and fishery products by exploiting the untapped fishery resources of the area beyond territorial waters by allowing deep-sea trawlers by paying prescribed fee.
- To uplift the socio-economic condition of the small-scale fishermen by providing them boats with modern gadgets, upgrading their knowledge/skills through training, and ensuring better prices for their harvest through improved handling, preservation and marketing system.

2. Exploitation of Non-Living Resources

Exploitation of non-living energy and mineral resources from the sea is the most promising aspect with respect to its economic potentials. It is also important because of the fact that Pakistan is heavily dependent on foreign energy resources and considerable amount of foreign exchange is spent each year to meet the energy requirements. During the period from July 2003 to April 2004, petroleum products worth $2.48 billion were imported. Moreover, the annual energy consumption has registered an estimated increase of 4.1 percent in the last thirteen years from 1990-91 to 2002-03.[128] However, exploitation of resources has to be preceded by the exploration of these resources, which remains very challenging because of its capital-intensive nature and the technology needed to undertake such projects. For a developing country like Pakistan, the only viable option remains the investment by private sector to undertake exploration and exploitation of these resources. Despite its enormous economic potential, offshore exploration of energy resources has progressed very slowly in Pakistan. There were few attempts in the past to explore offshore areas in the Indus delta and the Makran coastal region, which established the presence of hydrocarbon resources in these areas.

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[126] Ibid.

[127] Ibid.

[128] Economic Survey 2003-2004, Government of Pakistan, http://www.finance.org.pk/survey/chapters/15-Energy.PDF (12 September 2004).

Commercial extraction was, however, not undertaken from these wells because it was considered uneconomical.[129]

In 2001, the government of Pakistan announced a new offshore exploration policy, which is considered investor friendly and has since been able to attract some investment in this sector.[130] The policy offers a package of incentives for offshore exploration of oil and gas that allows the investors to recover their initial costs and subsequently share the revenues with government. Moreover, to promote the exploration in ultra deep water, the offshore areas were divided into three zones; shallow, deep and ultra-deep, for which different profit rates on oil/gas split were offered. In December 2003, a consortium led by Shell Development and Offshore Pakistan, a subsidiary of Anglo-Dutch Shell Group, started exploring oil and gas in the Indus delta region. Another offshore drilling contract was awarded to multilateral consortiums led by Shell and French Total. The Total-led consortium, which also includes Malaysia's Petronas and Austria's OMV, is expected to invest $30 to $40 million in drilling its ultra deep well located some 300 km from Karachi. Pakistan signed another offshore oil exploration deal with Total in July 2003 that could bring the investment up to $3 billion if a significant discovery is found. The state-run, Pakistan Petroleum Ltd, was awarded 8,500 square kilometers block along the coastline of Balochistan for exploration in this area.[131]

3. Challenges

There are two major challenges with respect to offshore exploitation of natural resources. First, the environmental degradation of the sea is a great concern in Pakistan and it is severely affecting the marine life in coastal areas, especially around Karachi. Pakistan has mangroves forests spread over 800,000 acres of swamp. These forests are essential life supporting ecosystem providing habitat, shelter and breeding ground for a number of economically important marine species. Exploitation of these forests and has put the marine and coastal ecosystems in Pakistan are under a great deal of stress. The

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[129] Commodore Muhammad Anwar, *Role of Smaller Navies: A Focus on Pakistan's Maritime Interests* (Rawalpindi: The Army Press, 1999), 143.

[130] *Dawn* (Karachi), 19 January 2001, http://www.dawn.com/2001/01/19/ebr1.htm (5 October 2004).

[131] *Dawn* (Karachi), 04 December 2003, http://www.dawn.com/2003/12/04/ebr9.htm (5 October 2004).

coast is exposed to negative environmental impacts from thermal pollution, increased oil spills, tar balls, and plastic and toxic effluents, including heavy metal. Karachi Port itself is mostly polluted by non-port-related activities. An estimated 90,000 tons of oil products from vessels and the port's terminals are dumped every year in the port's water.[132] Moreover 300 million gallons of untreated industrial and municipal waste is thrown into the Arabian Sea every day. All these factors are contributing towards the loss of important species of mangrove forests and marine animals, such as marine turtle. The port authorities are ill equipped to deal with a major ecological disaster. In July 2003 an oil tanker, Tasman Spirit, carrying a load of about 67,500 tons of crude ran aground in Karachi Port. The ship eventually broke up and released over 32,000 tons of crude oil in the sea, which has badly affected the marine life already exposed to coastal pollution. According to an estimate, cleansing of ecosystem from the adverse effects of oil spill will take at least five years.[133]

Second, in order to benefit from the Article 76 of the United Nations Convention on the Laws of the Sea (UNCLOS),[134] which establishes the right of a coastal state to extend its claim beyond 200 nm EEZ if there is a natural prolongation of the coastal state's landmass outside of that distance, Pakistan has a lot of work to do before submitting its claim. The absolute deadline for submitting the claims is 13 May 2009 i.e., 10 years after the date of adoption of the Scientific and Technical Guidelines laid down by the Commission on the Limits of the Continental Shelf (CLCS).[135] Coastal states who consider that they should claim shelf beyond 200 nautical miles need to prepare a robust case with supporting scientific and technical data, which will be evaluated by the

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[132] Pakistan: Ocean and Coastal Areas, Integrated Coastal Management, http://www.globaloceans.org/country/pakistan/pakistan.html (1 October 2004).

[133] *Dawn* (Karachi), 17 February 2004, http://www.dawn.com/2004/02/17/nat24.htm (9 October 2004).

[134] Part VI, Continental Shelf, The United Nations Convention on the Laws of the Sea, http://www.un.org/Depts/los/convention_agreements/texts/unclos/part6.htm (10 October 2004).

[135] Issues With Respect to Article 4 of Annex II to The Convention (Ten-Year Time Limit For Submissions), Commission On The Limits Of The Continental SHELF (CLCS), http://www.un.org/depts/los/clcs_new/issues_ten_years.htm (15 October 2004).

CLCS.[136] Preparation of such data is a complex, expensive, and time consuming undertaking, which is explained in detail by the Scientific and Technical Guidelines of the CLCS.[137] Since the potential loss of resource by a coastal state if it was to fail to claim is continental shelf beyond 200 nautical miles is huge, Pakistan must expedite its efforts in gathering the scientific and technical data and submitting its claim to the CLCS before it is too late.

E. CONCLUSION

The relevance of ports, the shipbuilding industry, and the exploitation of offshore natural resources as elements of the maritime power is discussed in this chapter. Ports not only provide a link between the land and the sea transport, they are a great catalyst for generating economic activity in the region surrounding it. With the increase in containerization, some ports of the world have assumed an even important role of serving the global trade and have become a great source of revenue for the host countries. Pakistan has relied on the two co-located ports at Karachi. Considering Pakistan's growing dependence on seaborne trade and the historical animosity with India, total reliance on ports situated in close proximity to India is strategically disadvantageous. The coastline west of Karachi was not exploited till very late. There is, however, a shift in the thinking of government, which has embarked upon an ambitious program of developing Gwadar as deep-sea port. The emergence of Gwadar as a deep-sea port has tremendous economic potentials. The port is envisioned to serve as a conduit for the trade of land-locked states of Central Asia and at some stage develop as a major transshipment port to serve the global seaborne trade in the region. Gwadar would also provide a strategically important base to the Pakistan Navy west of Karachi. The success and development of Gwadar as a major commercial port is not without its challenges. The most important challenge is the internal security situation in the region and the

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136 "Rules of Procedure of the Commission on the Limits of the Continental Shelf," http://ods-dds-ny.un.org/doc/UNDOC/GEN/N04/415/32/PDF/N0441532.pdf?OpenElement (13 October 2004).

137 "Scientific and Technical Guidelines of the Commission on the Limits of the Continental Shelf," http://ods-dds-ny.un.org/doc/UNDOC/GEN/N99/171/08/IMG/N9917108.pdf?OpenElement (13 October 2004).

concerns of the nationalist parties in Balochistan. It is extremely important for the government to find a mutually accepted and long lasting solution to the problem and provide a secure environment for private investment, which is crucial for development of the port.

Shipbuilding industry in Pakistan is has not been able to operate profitably except for a brief period in the 1970s. Lack of work has rendered the industry virtually idle except for the little support that it receives from the Pakistan Navy. Despite all its economic difficulties, shipbuilding industry remains a strategic asset, which Pakistan cannot afford to lose. Sustenance of shipbuilding is necessary to support indigenous ship construction efforts of the Pakistan Navy. For the industry to become financially viable in the long term, the government must look for foreign investment preferably from China, which is emerging as a major shipbuilder in the world.

Exploitation of offshore natural resources in Pakistan is progressing very slowly. The country has a vast exclusive economic zone, which is potentially rich in both living and non-living resources. However, in absence of scientific data and adequate oceanographic research, true extent of these resources is not known. Exploitation of living resources is mainly limited to marine fisheries, which is the biggest source of employment in the coastal region. The contribution of marine fisheries in the national economy has extensive potential to improve if Pakistan concentrates on exporting value added products as against raw fish and other fishery products. The existing fishing fleet of Pakistani fishermen needs to be modernized for better exploitation and preservation of living resources in the EEZ. Exploration of offshore energy resources has gained some momentum in the recent years because of attractive policies promulgated by the government. However, the results of these activities are known as yet. Two major challenges in this regard are the high level of marine pollution, which is damaging the offshore living resources and the limited time available for preparation of scientific data for claiming the continental shelf beyond the EEZ. Following recommendations are made with respect to development of ports, shipbuilding industry and exploitation of offshore resources in Pakistan:

- The government must address the security related issues in Gwadar and reach a negotiated solution with the nationalist elements in Balochistan taking due cognizance of their grievances. It is important for envisaged future investment by the private sector.
- The government must explore the possibility of joint collaboration with China for economic revival of domestic shipbuilding industry.
- The problem of marine pollution is seriously degrading the living resources and needs immediate attention. The government must devote more efforts to control and drastically reduce the damage being done by unchecked pollution.
- In order to submit its claim for continental shelf beyond the EEZ, the government must accelerate its effort to gather the scientific and technical data necessary for submitting the claim before the final date in 2009.

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IV. PAKISTAN NAVY—MILITARY POWER AT SEA

A. INTRODUCTION

Military power at sea is perhaps the most important component of a maritime power. While the international law of the sea provides for equal access to trade and resources to maritime nations, offering a multitude of benefits in economic terms; they nonetheless remain vulnerable to coercive pressure and simple predation.[138] The means to defend against such interdiction and the protection of economic elements of maritime power ultimately lie in the possession of an effective navy.[139] It can be argued that both economic and military elements of maritime power are not only interrelated, they are in fact interdependent. The quest for accruing economic benefits from the sea is a motivation for the development of the military power at sea, which in turn facilitates the growth and expansion of the maritime economic elements. This is aptly explained by a quote from Lord Haversham about the British case:

> Your fleet and your trade have so near a relation and such mutual influence on each other, they cannot well be separated, your trade is the mother and nurse of your seamen, your seamen are the life of the fleet and your fleet is the security and protection of your trade.[140]

Apart from protection of seaborne trade and resources, navies around the world serve strategic interests of the maritime nations i.e., the assertion of sovereignty in one's own territorial waters and to safeguard the security of state against any threat emanating from the sea. The existence of military power at sea is more relevant today than it was in the past considering the monumental growth of seaborne trade and its impact on economic development. All great maritime powers have either developed naval forces to protect their maritime assets or have been eclipsed by adversaries who either threaten

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[138] Hill, Maritime Strategy for Medium Powers, 35.

[139] Sam J. Tangredi, "Globalization and Sea Power: Overview and Context" in *Globalization and Maritime Power*, ed. Sam J. Tangredi (Washington, D.C.: National Defense University Press, 2002), 5.

[140] Quoted in Professor Geoffrey Till, "A Changing Focus for the Protection of Shipping" in *The Strategic Importance of Seaborne Trade and Shipping*, ed. Andrew Forbes (Canberra: RAN Sea Power Centre, 2003), 9.

their access to land-based resources and trade or challenge their commercial activity at sea by interfering with their rights of navigation.[141]

A maritime nation may have an identifiable continental or maritime inclination in its strategic orientation and culture because of its physical and political geography.[142] However, all maritime nations have certain maritime interests. The definition and scope of these interests for different countries varies depending upon a variety of factors. They can, however, broadly be categorized as strategic, and maritime interests. Strategic interests are related to protecting the security of the state, which has different connotation both in peacetime and during war. Maritime interests encompass all activities related to shipping, freedom of navigation, and the enforcement of the law of sea. It also includes resource-based interests, which are focused on exploitation of offshore resources within the EEZ. No matter what the strategic orientation of a maritime nation is, it needs an effective military power at sea to safeguard and promote its maritime interests. In fact both continental and maritime strategies are complimentary to each other and cannot work in isolation because neither sea power nor land power can be considered separately as instrument of decision in war.[143] Historically great sea powers have required a land power dimension to their strategy, and great land powers typically have discovered that without a strong navy, a sea-based enemy could menace their gains on land.[144] Napoleon may well have been beaten at Waterloo and not at Trafalgar, but it was after the defeat at Trafalgar that the Napoleonic hegemony crumbled and the British sea power gradually strangled 'Fortress Europe.'[145]

Pakistan has significant economic and strategic maritime interests. However, development of the Pakistan Navy as an element of military power has not been proportionate with the growth of country's maritime interests. This is primarily because

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[141] Alvin J. Cottrell and Associates, *Sea Power and Strategy in the Indian Ocean* (Beverly Hills: Sage Publications, 1981), 26.

[142] Colin S. Gray, *The Leverage of Sea Power: The Strategic Advantage of Navies in War* (New York: Free Press, 1992), 2.

[143] Ibid., 280.

[144] Ibid., 278.

[145] Colin S. Gray, *The Navy in the Post-Cold War World* (University Park: Pennsylvania State University Press, 1994), 107.

of continental orientation of the policy makers, who have failed to recognize a suitable role of the navy in overall military strategy of the country. This weakness of the navy presents grave vulnerabilities considering Pakistan's overwhelming dependence on seaborne trade and its continued rivalry with neighboring India. In this chapter I discuss the Pakistan Navy as an element of maritime strategy in Pakistan.

Since the need for a navy is driven by maritime interests of a nation, it is important to understand why Pakistan needs a navy and whether the size and shape of the Pakistan Navy are commensurate with the interests. Though there are a number of factors, which have affected the development of the Pakistan Navy in varying degrees, yet the most important factor remains the continental mindset of the ruling elite and the overbearing influence of the Pakistan Army in framing strategic perceptions of the country. In this chapter I argue that development of the Pakistan Navy is more important now than it has been ever before and Pakistan cannot afford to neglect it in future. This argument is built on two hypotheses. First, limited conventional war at sea between India and Pakistan is more not less likely in a future conflict. Overwhelming conventional superiority of the Indian Navy poses serious challenges in case of such an eventuality. Second, the acquisition of sea-based second-strike capability by India, which it is aggressively pursuing, would disturb the strategic balance in the region and may result in failure of nuclear deterrence. Pakistan must acquire a sea-based second-strike capability to maintain strategic balance in the region. There are, however, a number of challenges for the development of the navy, the most important of which would require the redistribution of allocated military resources. In the greater national interest the policymakers in Pakistan will have to abandon their continental biases in order to make the Pakistan Navy as an effective tool of military strategy.

B. HISTORICAL BACKGROUND

1. Pakistan's Maritime Interests—The *raison d'être* of Pakistan Navy

The strategic value of naval power cannot be derived from the isolated study of ships, navies, or sea power because naval power is valuable only if a country needs it.[146]

146 Ibid., 161.

The size and power of the navy of a country has to commensurate with its maritime interests. In order to understand the *raison d'être* of the Pakistan Navy, it would be appropriate to analyze the maritime interests of the country.

a. Strategic Interests

External military threat and security perceptions for Pakistan come solely from India and nowhere else.[147] Ever since it gained independence in 1947, Pakistan has continuously lived in an atmosphere of bitter animosity with neighboring India. There have been a number of armed conflicts between the two rivals in the past, one of which saw the dismemberment of the eastern wing of the country in 1971, now Bangladesh. Despite the fact that both countries demonstrated overt nuclear capability in 1998, nuclear deterrence has not precluded the possibility of armed conflict. In fact, South Asia is the only region in the world where active armed conflicts occur under the shadow of nuclear weapons.[148] The region has witnessed a limited war in Kargil between India and Pakistan in 1999 followed by a prolonged and dangerous military standoff in 2001-02. These crises have demonstrated that even the presence of nuclear weapons might not appreciably dampen security competition between India and Pakistan and recurrence of such events in future cannot be ruled out since major issues between the two countries are still unresolved.

The growing conventional military imbalance between the two countries has serious consequences and it may jeopardize the nuclear deterrence to work at its best. This is more so in case of the two navies where the conventional balance tilts heavily towards India. Whatever qualitative edge Pakistan Navy enjoyed in the past has eroded mainly because of its stagnated development since early 1990s owing to the US sanctions and the slump in the economic growth. During the same period, the Indian Navy has grown rapidly both in terms of quality and quantity as a result of sustained economic growth and the consequent increase in defense spending. The reasons for Indian naval modernization are clear enough. India has always aspired to become a maritime power in

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147 Saadet Deger and Somnath Sen, "Military Security and the Economy: Defence Expenditure in India and Pakistan" in *The Economics of Defence Spending: An International Survey*, ed. Keith Hartley and Todd Sandler (London: Routeledge, 1990), 189, 200.

148 Ashley J. Tellis, *Stability in South Asia* (Washington, D.C.: RAND, 1997), 2.

the region because of its regional hegemonic designs. India is dependent on sea for its international trade and offshore living and non-living resources. With its economy becoming more stable and the increase in demand of resources due growing population, India will move towards a significant naval presence.[149] Secondly, and even more importantly is the fact that India is progressing fast to achieve a sea-based second-strike capability, ostensibly to pursue an independent foreign policy posture,[150] which can nonetheless have a destabilizing effect on the strategic balance in the absence of similar capability with Pakistan.

In short, the future development of the Pakistan Navy needs to be viewed from two strategic angles. Considering the hypothesis that a limited conventional war in future between India and Pakistan cannot be totally ruled out, an overwhelming conventional imbalance between the two navies can be a highly destabilizing factor. For conventionally weaker side, Pakistan, it reduces ability of the country to absorb a conventional shock and may thus result in lowering the nuclear threshold. That is to say that a conventionally weaker side would reach the nuclear threshold sooner than its adversary. This can have serious implications for the country with respect to its decision-making ability to deploy nuclear weapons. For example, despite its conventional inferiority and the security challenges that it may face in any future conflict, how would the international community view Pakistan's decision to deploy nuclear weapons at an early stage of the conflict?

Secondly, a nuclear force capable of fulfilling the deterrence functions assigned to it without undue risks must be able to survive a first strike designed to prevent the force from striking back. At present both India and Pakistan do not possess credible second-strike capability, which is capable of surviving a first strike. This in itself is a destabilizing factor because it invites preemption in face of imminent perceived threat. The problem further compounds considering Indian efforts to acquire a sea-based second strike capability. Absence of a similar capability with Pakistan may make

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[149] Saadet Deger and Somnath Sen, "Military Security and the Economy: Defence Expenditure in India and Pakistan", 203.

[150] Rahul Bedi, "India Outlines Vision of Future Nuclear Navy," *Jane's Navy International*, 1 September 2004.

preemption more likely leaving Pakistan with the only option to acquire a sea-based second-strike capability in order to maintain a credible nuclear deterrence.

b. Economic Interests

Economic interests can be broadly divided into two categories: trade and access, and resource based interests. All maritime countries depend in varying degree for their economic well being on overseas trade. Generally, the importance of maritime trade depends on a country's geographical location and the level of its economic self-sufficiency.[151] However, integration within the global economy and reliance on international trade as the primary engine of economic growth and development are more relevant today than ever before. Sea provides the most cost-effective medium for transportation of goods around the globe, which explains why the bulk of international trade is routed through sea. Pakistan, because of its geo-strategic location and the prevalent geo-political environment, is heavily dependent on seaborne trade. More than 95 percent of country's trade is transported through sea, which in 2002-2003, approximately amounted to 36.3 percent of the Gross Domestic Product (GDP).[152] With the relative economic stability being witnessed by the country for the last couple of years, the share of international trade is expected to increase. This is evident from the projected growth of trade for the year 2004-05 where the export and import targets have been set at $13.7 and $16.7 billion respectively.[153] The completion of Gwadar deep-sea port in the near future is likely to increase the trade volume in coming years. It would also be appropriate to mention here that 45 percent of Pakistan's energy requirements are met by fuel oil. At present two thirds of the total fuel requirement oil is imported from the Gulf region, and with the projected consumption rate, Pakistan is likely to become one of the largest importers of fuel oil in the Asia-Pacific region by 2005.[154]

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[151] Milan N. Vego, *Naval Strategy and Operations in Narrow Seas* (Portland: Frank Cass, 1999), 254.

[152] Economic Survey 2002-2003, Government of Pakistan, http://www.finance.gov.pk/survey/chapters/09-trade.PDF (10 September 2004).

[153] *Dawn* (Karachi), 23 July 2004, http://www.dawn.com/2004/07/23/top1.htm (29 October 2004).

[154] Hassaan Vahidy, Fereidun Fesharaki, "Pakistan's Gas Discoveries Eliminate Import Need," *Oil & Gas Journal Tulsa, 28* January 2002.

Attack on maritime trade in general has always been a considerable feature of any war at sea and is usually highly effective against an island nation, but less so against a continental country with well-developed land communications with its neighboring countries.[155] Over land Pakistan has limited options due to its geographic location and geopolitical situation in neighboring countries. Sea remains the only viable mean for trade. Disruption of seaborne trade in case of a future conflict with India, which is an explicit operation, envisaged by the Indian Navy,[156] can adversely affect the fragile economy of Pakistan. Though economic strangulation of Pakistan by India has been defined as one of the thresholds that would (or could) lead to Pakistani nuclear retaliation,[157] yet there is something, which merits careful consideration. The objectives of attack on enemy maritime trade are reduction of the traffic volume, usually expressed in percentages. This is accomplished by 'interfering' with or 'interdicting' enemy maritime trade.[158] Because of inherently flexible nature of naval forces, they can be deployed at high seas without commitment, to wait and gain time for diplomacy. They can pose a threat and sustain it without a single warlike act and if prospects look poor, naval forces are easier to withdraw.[159] Short of outright interdiction of maritime trade, an offensive posture by the Indian Navy at sea can interfere with Pakistan's seaborne trade either by deterring neutral shipping from plying in a war prone zone or unacceptably increasing freight rates and insurance charges. In absence of a well-developed merchant marine under national flag, which in case of Pakistan carries only 5 percent of the total trade volume,[160] such a situation poses serious challenges. It can badly hurt the economy while resting the onus of changing the status quo squarely on Pakistan.

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155 Vego, Naval Strategy and Operations in Narrow Seas, 225.

156 Jane's Sentinel Security Assessment - South Asia, Indian Navy, 16 April 2004.

157 Rodney W. Jones, "Is Nuclear Deterrence Feasible?" 22-26 February, 2002, http://www.ceip.org/files/projects/npp/pdf/stablenucleardeterrence.pdf (15 July 2004).

158 Vego, *Naval Strategy and Operations in Narrow Seas*, 225-226.

159 James Cable, *The Political Influence of Naval Force in History* (New York: St. Martin's Press, 1998), 174.

160 "Regional Seminar on Liberalization of Maritime Transport Services under WTO GATS", Country Report 'Pakistan', http://www.unescap.org/tctd/nvg/wtogats2002files/pakistan_wtogats.pdf (7 May 2004).

Resource based interests form the other main category of maritime economic interests. Pakistan has an EEZ of 240,000 square kilometers, which is rich in food and mineral resources. In addition Pakistan can lay claim on the continental shelf and thus bring another 60,000 square kilometers of sea area under its jurisdiction. There is however, an outstanding boundary dispute between India and Pakistan in the Sir Creek area, which is the most fish fertile area of the region. Sir Creek, one of the distributaries of River Indus, is a 60-mile-long strip of water between the Rann of Kutch (India) and Sindh (Pakistan), which emerged as a disputed area in late 1960s. A number of inconclusive attempts have since been made to find a solution to this conflict, the latest being made on 5-6 August 2004. Though both the countries have reiterated the need for an early resolution of the conflict; none is apparently ready to make concessions from its stated position. Pakistan has, however, taken a step further by proposing to take the matter to an international tribunal for settlement.[161]

Exploitation of sea-based resources in the EEZ was not accorded the priority that it deserved in the past. However, a new offshore oil and gas exploration policy was announced by the government in 2001,[162] which is considered investment friendly and has been successful in attracting some foreign investment. A couple of offshore drilling contracts have already been awarded to multilateral consortiums and some exploration activities in the Indus Delta have commenced in December 2003.[163] The fishing industry in Pakistan, though not very well developed, is a modest source of foreign exchange earning. In addition it provides employment opportunities to few hundred thousand workers in the provinces of Sindh and Balochistan.

The economic resources in the EEZ can for all practical purposes be considered as an extension of land based resources and merit similar security considerations from predation and exploitation by others. The greater the interests of a nation in the EEZ, the higher would be the requirement to provide security against external threats.

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[161] *Dawn* (Karachi), 25 August 2004.

[162] *Dawn* (Karachi), 19 January 2001.

[163] *Dawn N* (Karachi), 4 December 2003.

2. Evolution of the Pakistan Navy

a. The Early Years

The Pakistan Navy has been the most neglected of the three armed services.[164] It has witnessed a troubled history since its foundation in 1947. At the time of independence, Pakistan Navy inherited a modest share of two sloops, two frigates, and four ocean minesweepers. The ship repair and maintenance facilities were concentrated in Indian ports of Bombay and Calcutta. There was no facility for naval stores and armaments supply and above all there was an acute shortage of officers in every branch of the navy. Rear Admiral Jefford, the first C-in-C of the Royal Pakistan Navy, made this remark after reviewing the overall situation, "We have the ships and the men, the rest we must create."[165] Despite the fact that Pakistan Navy encountered the perennial problems suffered by third world navies operating from inadequate bases of financial, technological and personnel resources with the presence of an overweening threat enjoying advantages of geography and scale,[166] it has come a long way in transforming itself to a three-dimensional combat force. One of the major obstacles that the Navy confronted vis-à-vis its smooth development after independence was institutional. The Army in Pakistan was the dominant service in size and influence to such an extent that all defense problems were treated from a wholly Army viewpoint.[167]

Lack of a maritime vision in Pakistani policymakers was evident right from the outset who could not envisage a defined place for the Pakistan Navy in the overall strategic plans for the defense of the country.[168] This also helps in explaining why the navy's steady improvements in general capability during early years were not matched by the development of any coordinated system of joint service command or doctrine. Creating an understanding about the role of the navy in the defense of the

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164 *Jane's Sentinel Security Assessment* - South Asia, Pakistan Navy, 23 April 2004.

165 *Story of the Pakistan Navy,* History Section, Naval Headquarters, Islamabad (Karachi: Elite Publishers, 1991), 64.

166 James Goldrick, *No Easy Answers: The Development of the Navies of India, Pakistan, Bangladesh and Sri Lanka 1945-1996* (Hartford: Spantech & Lancer, 1997), 45.

167 Ibid., 46.

168 Ibid., 60.

country was one of the biggest challenges faced by the navy ever since its existence. The policy makers did not appreciate that the sea provided the only reliable link between the two wings of the country otherwise separated by over a thousand miles of hostile territory. Rather than encouraging a joint approach, President Mohammad Ayub Khan even attempted to merge the navy and the air force into the army by changing their ranks and uniforms to match the latter. [169]

Despite all the challenges that the Pakistan Navy faced in its formative years, it was lucky to be led by a competent and visionary leader in the form of Vice Admiral H. M. S. Choudri, the first Pakistani Commander-in-Chief of the Pakistan Navy. After assuming the post of C-in-C in 1953, Admiral Choudri exploited all possible opportunities for expansion of the navy. However in the process he was often dismayed by the attitude of decision makers in Pakistan, who "sometimes expressed views which betrayed, consciously or otherwise, a lack of appreciation of factors which constitute Pakistan's maritime defense."[170] U.S.-Pakistan Mutual Defense Agreement and South East Asia Treaty Organization (SEATO), both signed in 1954, facilitated the relentless efforts of Admiral Choudri and the Pakistan Navy saw an era of modest expansion from mid to late 1950s. This transformation, however, did not last very long and differences began to surface after the military coup in 1958. President Mohammad Ayub Khan, "who did not appreciate the need for a navy for Pakistan except for local naval defense to keep the harbors clear of mines," was not particularly happy with the expansion of the navy in spite of his best efforts to prevent it from happening.[171]

The navy's efforts to acquire submarines from Sweden in late 1950s met stiff resistance from the government and at one time President Mohammad Ayub Khan refused to sanction a budget sufficient to allow operation of the entire fleet, which had been assembled since 1956. [172] The government went as far to issue orders for scrapping

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[169] Ibid., 59.

[170] *Story of the Pakistan Navy*, 161.

[171] Ibid., 163, 198.

[172] Goldrick, *No Easy Answers: The Development of the Navies of India, Pakistan, Bangladesh and Sri Lanka 1945-1996*, 57.

the cruiser PNS BABUR, which had only been acquired in 1957, without even consulting the Naval Chief.[173] Such acute differences eventually forced Admiral H. M. S. Choudri to submit his resignation on 26 January 1959, citing his great concern over the effect of certain major decisions of the government on the morale and fighting efficiency of the navy:

> These decisions concerning the present and the future shape and size of the Navy [which] have been taken in disagreement with the technical advice I have consistently rendered…in matters concerning the concept of our defense, the apportionment of our available defense budget…and the size and shape of our Navy etc. This advice has throughout been based on my sincere conviction that the Navy of the size and shape that I was pleading for was the right answer to the defense of the country from the naval point of view. I still adhere to that view.[174]

b. The 1965 War

From late 1950s to the period leading up to the 1965 war between Pakistan and India, Pakistan Navy made some progress in the acquisition of maritime aircraft and submarines. USS Diablo, a *Tench* class submarine was transferred to Pakistan under the US Aid program and was commissioned as PNS GHAZI on 1 June 1964. Meanwhile successful negotiation took place between Pakistan and France for the purchase of three Daphne class submarines. In 1964, efforts were also made for purchase of six Atlantic aircraft, which were not supported by the US Military Aid Group due foreign origin and prohibitive cost of the aircraft.[175] Pakistan Navy, despite its lack of a well defined place in President Ayub Khan's overall strategic plans for the defense of Pakistan,[176] was well prepared when the hostilities broke out between Pakistan and India on 6 September 1965. However, the naval action during the war was limited to the successful bombardment of the radar installations at Dwarka by the Pakistan Navy ships on the night of 7/8 September 1965. The aim of this raid was to draw enemy units out of Bombay for the

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[173] *Story of the Pakistan Navy*, 200.

[174] Ibid., 201.

[175] Ibid., 210.

[176] Goldrick, *No Easy Answers: The Development of the Navies of India, Pakistan, Bangladesh and Sri Lanka 1945-1996*, 60.

submarine GHAZI to attack (which was deployed off Bombay), destroy radar installations at Dwarka, lower Indian morale, and to divert Indian air effort away from the north.[177]

c. The 1971 War

During the intervening period between the two wars, Pakistan Navy continued to receive a lower priority, which saw the degeneration of the fleet into a shrinking force incapable of providing protection to the sea lines of communication between the two wings. Addition of three *Daphne* submarines was the only comfort, but their limited endurance confined operations only to the Arabian Sea. Lack of air reconnaissance capability proved to be a critical deficiency during the war. In the corresponding period, the Indian Navy underwent rapid expansion and modernization. The Indian fleet was augmented by addition of a submarine force, acquisition of six *Osa* class missile boats from Soviet Union, and strengthening of surface fleet and naval air arm.[178]

The Pakistan Navy was in no position to respond to the Indian naval challenge in the East, where it never maintained more than a gunboat squadron and a few old river craft on a permanent basis. Even its capacity to undertake limited operations in the West was far from adequate. To rectify the strategic posture submarine GHAZI was deployed to the Bay of Bengal. However, after its reported loss on 3 December 1971, the Indian fleet faced virtually no opposition from the Pakistan Navy. The carrier-based aircraft were extensively used by the Indian Navy against a variety of targets ashore. A defensive minefield in the approaches to Chittagong port denied direct access to the Indian forces, which subsequently carried out an amphibious landing at Cox's Bazar. This unchallenged presence of Indian Navy ruled out any possibility of reinforcement of troops in the beginning of the war or their withdrawal at a later stage.[179]

In the western theater, Indian Navy successfully employed its *Osa* class missile boats and carried out two raids on shipping and shore installations at Karachi. It

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[177] *Story of the Pakistan Navy*, 217.

[178] Ibid., 331.

[179] Ibid., 342.

resulted in sinking of two Pakistan Navy ships and damaging another. A few merchant ships at Karachi anchorage and an oil terminal at Keamari were also targeted during these raids. The third missile attack by the Indian Navy was aborted after a successful attack by Pakistan Navy Submarine HANGOR on 9 December, which resulted in sinking of Indian Navy frigate KHUKHRI. This modest success took the pressure off from Pakistani coast and restored the morale of officers and men. Given its state of preparedness due continued neglect in the decade preceding the war and the lack of emphasis on the protection of sea communications, the Pakistan Navy was in no position to face the Indian threat. The Indian attacks on Karachi confirmed that the threat to Pakistan was not purely over land. It also exposed the vulnerability of Pakistan's international commerce to interdiction.[180]

d. The Post 1971 Consolidation Era

Ironically, the loss the Eastern wing of the country in 1971 simplified much of the strategic planning for the navy, which could now concentrate its efforts in the west. In the following decade, the navy kept on striving for improving its condition and explored diverse sources for procurement of equipment. The naval air arm was strengthened by induction of *Atlantique* maritime patrol aircraft, *Sea King* and *Alouette III* helicopters. Availability of the U.S. Navy *Gearing* class destroyers from late 1970s to early 1980s made up for acute shortages in the surface fleet. Acquisition of two *Agosta* class submarines from France and a Daphne from Portugal gave a boost to the submarine force. In 1982, Pakistan Navy bought a *County* class guided missile destroyer from Britain, which provided the much-needed platform for maintaining the training capability.

The Soviet invasion of Afghanistan and the consequent resumption of economic and military aid by the United States offered new opportunities to the navy for its consolidation and development. Acquisition of RGM 84 *Harpoon* missiles and their associated systems profoundly improved the offensive posture of the Pakistan Navy. These missiles were superior to *Styx* missiles in the Indian Navy and against which it did

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[180] Goldrick, *No Easy Answers: The Development of the Navies of India, Pakistan, Bangladesh and Sri Lanka 1945-1996*, 140.

not possess adequate defenses.[181] An even significant development was the ability of Pakistan Navy to fire *Harpoon* missiles from its submarines, which further compounded the Indian Anti Submarine Warfare (ASW) problem. In the late 1980s, Pakistan Navy purchased two *Leander* class frigates from Britain and was able to secure the lease of eight *Brooke* and *Garcia* class frigates from the United States.

e. Post Cold War Realities

Soon after the withdrawal of the Soviet Union from Afghanistan and its subsequent collapse, the United States lost its interest in the region and Pakistan no longer remained "the bulwark of the American effort to contain the USSR."[182] In the middle of 1990, the United States imposed a fresh arms embargo, nicknamed the "Pressler Amendment" after its sponsor in the United States Congress, and intended to dissuade Pakistan from pursuing its nuclear weapons development effort. The Pakistan Navy took the major brunt of these sanctions and any hope of a balanced fleet development withered away. The ongoing deals for purchase of maritime patrol aircraft, helicopters, and *Harpoon* missile system were frozen. The worst of all was the United States decision not to renew the lease of eight *Brooke* and *Garcia* class frigates after initial five years, which almost stripped bare the surface fleet of Pakistan Navy. The deal to purchase six old Type 21 frigates form the United Kingdom served as a timely gap filler and Pakistan Navy once again returned to the hand to mouth existence of previous years.[183] Nonetheless, Pakistan Navy managed to secure a deal for replacement of its elderly *Daphne* submarines and even older minesweepers. In 1994 Pakistan signed a contract with France for the supply of three *Agosta 90B* submarines. The lead boat, KHALID, was built by DCN Cherbourg and entered service in December 1999, with the second and third boats being built in Pakistan with design and engineering support from DCN. The second boat SAAD was commissioned in December 2003 and was the first ocean-going submarine ever built in Pakistan. The third boat of the class is scheduled to begin sea trials in 2005, which will be fitted with an air-independent propulsion (AIP)

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[181] Ibid., 144.

[182] Ibid., 148.

[183] Ibid.

module incorporating the MESMA (*Module Energie Sous-Marin Autonome*) AIP plant.[184] Induction of three *Eridan* class mine hunters in 1990s, last of which was built in Pakistan with French assistance, has significantly improved Pakistan Navy's mine countermeasure capability. The Pakistan Navy is also negotiating a deal for purchase of four Chinese frigates to augment its surface fleet.

The Pakistan Navy is yet again faced by the problems that it has endured since its foundation. Continuing emphasis on strengthening the land forces, coupled with meager resources of the state has made it increasingly difficult to create and maintain adequate naval force structure. The recent shift in the U.S.-Pakistan relations and the consequent elevation of Pakistan as a major non-NATO ally are interesting developments. The prospective deal to purchase eight *P-3C* aircraft and six *Phalanx* Close-In Weapon Systems (and up gradation of existing six weapon systems) from the United States is a major development.[185] Conclusion of this arms deal will enhance the existing capabilities of naval air arm and improve missile defense capabilities of surface ships.

3. Reasons for Prolonged Neglect

It is a general consensus that amongst the three armed services, the Pakistan Navy has remained the most neglected.[186] An objective analysis is considered necessary to determine the reasons behind such neglect in order to devise an effective developmental strategy for the future.

a. Physical Geography

Pakistan's coastline stretches 1,046 kilometers from the Iranian border in the northwest to the Rann of Kutch, bordering India in the southeast. There are a number of geographical factors that affect the development of the sea power. With respect to its position vis-à-vis the adjacent sea and the land area, Pakistan occupies a 'semi-central position,' i.e., a country located on the rim of a continental land mass, but borders a sea

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[184] Jane's *Navy* International – 1 November 2003.

[185] Defense Security cooperation Agency, 36(b) Arms Sales Notification Index, http://www.dsca.osd.mil/PressReleases/36-b/36b_index.htm

[186] Ayesha Siddiqa-Agha, *Pakistan's Arms Procurements and Military Buildup, 1979-99* (New York: Palgrave, 2001), 64.

or an ocean. Historically such position has not always been favorable to the development of sea power.[187] Shape of country is yet another factor that may considerably affect its maritime development. Pakistan's physical shape best fits the description of a country with an 'elongated shape', where length of the country is at least six times greater than its width. The land frontiers of a country with an elongated shape in combination with narrowness are difficult to defend against enemy invasion. Such countries are usually forced to maintain large standing armies, thereby diverting resources from the development of their sea power.[188] This description fits ideally in case of Pakistan, which faces an overwhelming threat over land border adjoining India.

In addition the configuration of a country's coast, the number and quality of natural harbors, physical character of the coastal area, abundance or scarcity of natural resources, and inland communications affect the development of sea power in varying degrees. Pakistan's coastline is sparsely populated with the exception of Karachi, the country's main port and commercial center. West of Karachi, the coastal area has remained undeveloped with very limited communications (the coastal highway linking Karachi and Gwadar is presently under construction), mostly composed of barren and rugged mountains. However, this underdevelopment and lack of communication infrastructure along the coast itself is a possible outcome of the continental mindset of policy makers in Pakistan. This is because of the reason that a coast with well-developed road network and railways is more vulnerable to invasion by the sea, because it facilitates speedy advance of the enemy army into the country's interior. A coast without any, or only a few, lateral communications favors the defense, because it offers few access routes into the country's interior for an army, which has been successfully landed on the coast.[189]

b. Influence of Pakistan Army

The Pakistan Army is the largest amongst the three armed services in Pakistan. Because of its relative size and involvement in the political affairs of the

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[187] Vego, *Naval Strategy and Operations in Narrow Seas*, 15.

[188] Ibid., 21.

[189] Ibid., 32.

country, the Pakistan Army has always had an overarching influence in shaping the strategic perceptions of the country.[190] The continental mindset of the army has had difficulty in envisaging a definitive role for the Pakistan Navy in the overall defense of the country. In words of Ayesha Siddiqa-Agha, "Military plans in Pakistan are focused on the thinking of the Army generals who have a 'land locked' approach which makes it difficult for them to appreciate the importance of naval defense."[191] In theory the maritime component of the national military strategy of a sea power is not in an adversary relationship with the land power component. However, in practice, the need to decide on the allocation of scarce resources produces tension between them.[192] This becomes even problematic for smaller services in Pakistan because for them to have any in strategic planning or their ability to get their plans and acquisitions approved from the government, depended on their importance for the Army.[193] While such alignments may be possible for the Air force to get its plans through, it has always remained an uphill task for the navy.

Overemphasis on the land strategy in the overall strategic planning of Pakistan's military leaders is akin to what Napoleon once believed, "*Je veux conquerir la mer par la puissance de terre* [I shall conquer the sea by the power of the land]."[194] However, he would have soon realized that "although great wars are usually fought and won on land, they are often decided at sea."[195] If history is of some consequence in evolution and development of military strategy, then policy makers in Pakistan have a great deal to learn from its own history. The 1971 India-Pakistan War is one such historical example where a war conducted largely over land was influenced by the sea power. The Pakistani land oriented strategy where it was believed that east could be defended only in the west, met a serious set back. After the loss of Pakistan Navy

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190 Ayesha Siddiqa-Agha, *Pakistan's Arms Procurements and Military Buildup, 1979-99* (New York: Palgrave, 2001), 60.

191 Ibid., 64.

192 Gray, *The Navy in the Post-Cold War World*, 13.

193 Siddiqa-Agha, *Pakistan's Arms Procurements and Military Buildup, 1979-99*, 60

194 Gray, *The Leverage of Sea Power: The Strategic Advantage of Navies in War*, 56.

195 Robert Leckie, *The Wars of America* (New York: HarperCollins, 1992), 603.

submarine GHAZI off the Indian east coast, the Indian Navy was able to operate with virtual immunity off East Pakistan, sinking shipping and launching carrier based air strikes. The Indian Navy blockaded East Pakistan and extinguished any hopes of reinforcement from the west, which broke Pakistani morale and accelerated surrender.[196]

c. Economic Constraints

The navy is a capital-intensive and expensive service. It needs money to buy ships, submarines, aircraft and other weapon systems, and for creating extensive maintenance and logistical facilities. Technological sophistication has been an important factor in the burgeoning cost of naval equipment. All defense inflation is higher than ordinary inflation but the rate tends to be worse for navies than it is for armies, because they are more capital intensive. When planning their construction programs, navies deal with substantive amount of money at any one time. It is for this reason that economic policy makers are often tempted to cut a warship out of the program because by doing so they are able to make immediate and significant savings.[197] Furthermore the high cost of naval armaments makes them politically controversial, either in terms of where they should be constructed and by whom, or indeed of whether they should be built at all.[198]

Nowhere in the world is the inherent conflict between economic development and strategic security as acute as in the Indian sub-continent.[199] A secure defense is undoubtedly one of the greatest benefits that a state can confer upon its citizens but at the same time it must balance its resource distribution. What is already spent on defense cannot be spent elsewhere. More tanks, warships, and aircraft mean fewer hospitals, poorer schools, worse roads, and very little to spare for developmental work.[200] However, in face of the security threat faced by Pakistan, such hard choices remain unavoidable. "Each has its price in terms of the alternative benefits that must be foregone. People no more fill their bellies by buying guns than they defend themselves

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196 Norman Friedman, *Seapower as Strategy* (Annapolis: Naval Institute Press, 2001), 208-210.

197 Geoffrey Till, *Modern Sea Power* (London: Brassey's Defence Publishers, 1987), 10.

198 Ibid., 12.

199 Saadet Deger and Somnath Sen, "Military Security and the Economy: Defence Expenditure in India and Pakistan," 189.

200 Philip Pugh, *The Cost of Seapower* (London: Conway Maritime Press, 1986), 6.

by eating butter."[201] The severity of this dilemma is more in case of Pakistan because of its smaller economy and even poorer economic growth over the years. All these factors make the matters worse for the Pakistan Navy being lowest on priority among the three services. The limited amount of budget is barely sufficient for meeting running cost of existing fleet and leaves little room for improvement. This is further compounded by lack of adequate technological base in the country to meet the challenges posed by ever advancing sophistication in naval weapon systems, forcing the navy to look for foreign sources, which are inherently expensive and are not always available due to dynamics of international politics.

C. CHALLENGES

1. Indian Navy Buildup

India has a coastline of 6,300 kilometers with an additional 1,200 kilometers being added by the island territories of Lakshadweep, Andaman, and Nicobar islands. It has 11 major, 20 intermediate ports, and over 100 minor ports. The EEZ of India is approximately 2.2 million square kilometers. India inherited similar continental outlook at the time of independence, however, Indian policy makers were quick to recognize the vital role their navy could play in maritime defense of the country. While some Indian analyst may still argue that the growth of the Indian Navy has been slow due to lack of funds and lack of political and bureaucratic interests in maritime matters; such views are not substantiated by the facts.[202] The development of the Indian Navy that started in mid-to-late 1960s has progressed gradually over the years. Moreover, the success of the Indian Navy in the 1971 war with Pakistan created a new sense of confidence in the service and gave it a more prominent status within Indian defense structures.[203]

Indian Navy is the fifth largest navy in the world, which is reasonably well balanced three dimensional force having modern missile-armed warships, an aircraft

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[201] Ibid., 9.

[202] Vice Admiral Gulab Hiranandani, Indian Navy (Retired), "The Indian End of the Telescope—India and Its Navy," *Naval War College Review,* Spring 2002, 68.

[203] Goldrick, *No Easy Answers: The Development of the Navies of India, Pakistan, Bangladesh and Sri Lanka 1945-1996*, 105.

carrier, minesweepers, advanced submarines and adequate air arm. Indian Navy has an aspiration of acquiring a power projection posture, which is endorsed by the Indian government and supported by the population at large. The future outlook of the Indian Navy is envisaged to be a strategic force centered around two carrier battle groups, nuclear-powered submarines and strategic bomber/maritime strike aircraft, playing a dominant role in the Indian Ocean region. The development strategy of the Indian Navy is two pronged: there is an extensive indigenous program, which is supplemented by available defense procurements from abroad. India has already successfully tested the nuclear power plant for its Advanced Technology Vessel (ATV) cruise missile submarine. The plans for indigenously built 32,000-ton aircraft carrier (Air Defense Ship) are well underway and it is expected to join the service by 2013.[204] In January 2004, India finalized its deal with Russia for purchase of aircraft carrier *Admiral Gorshkov*. The aircraft carrier will be equipped with MiG-29K fighter jets, a mix of Ka-28 ASW and Ka-31 AEW helicopters, and will be available to the Indian Navy by 2009 after contractual modifications.[205] Indian navy is also negotiating the purchase of 8-10 refurbished Lockheed Martin P-3C Orion maritime strike/reconnaissance aircraft from the United States.[206]

After conducting its nuclear tests in 1998, India declared that its minimum nuclear deterrence (MND) would be based on a triad of weapons delivered by aircraft, mobile land-based missiles and sea-based platforms. The Indian Navy is poised to embrace a new maritime doctrine moving away from coastal protection to a more competitive strategy of developing a credible minimum nuclear deterrence, with view to dominate the Indian Ocean Region (IOR). According to a semi-classified Indian Maritime doctrine released in April 2004, Indian Navy has clearly stressed the need to acquire a submarine-based credible MND, which would enable India to pursue an "independent foreign policy

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[204] *Jane's Sentinel Security Assessment* - South Asia, Indian Navy, 16 April 2004.

[205] The Indian Navy Today, http://www.bharat-rakshak.com/NAVY/Gorshkov.html (14 August 2004).

[206] Rahul Bedi, "India Outlines Vision of Future Nuclear Navy," *Jane's Navy International*, 1 September 2004.

posture."[207] Apart from pursuing its indigenous Advanced Technology Vessel program and the associated development of 'Sagarika' submarine-launched cruise missile, the Indian Navy has reportedly entered into a covert agreement with Moscow for the lease-purchase of two *Akula* class Type 971 nuclear powered submarine (SSNs) for around $700 million each, with the option of acquiring a third similar boat. The first submarine would be reportedly handed over by 2004-05.[208]

The Indian economy is evidently set on a path of reforms and is growing strongly. The present military balance in the sub-continent strongly favors India, and with every passing year, India's superior economic performance will improve its military advantage.[209] Indian Navy has a 5:1 advantage over the Pakistan Navy in terms of combat vessels, air assets and manpower.[210] Indian strategists view the growth and development of the Indian Navy in line with its expanding maritime interests. However, because of its security perceptions and continued rivalry with India, Pakistan can ill afford to ignore these developments. This is a classical case of security dilemma where efforts by one country to improve its security make the other feel increasingly insecure and threatened. In words of Philip Pugh:

> What one nation sees at its ample—but necessary—defense can appear to its neighbor as a threat indicative of aggressive intent and justifying counterbalancing increase in armaments. Overprovision of defense may thus erode the very security that it seeks to ensure.[211]

2. Have Nuclear Weapons Made the Pakistan Navy Irrelevant?

It may be true that "nuclear weapons negate the advantages of conventional superiority because escalation in the use of conventional force risks receiving a nuclear strike."[212] But does it mean that nuclear weapons make conventional forces irrelevant? Or more specifically what is the need of maintaining a conventional navy if it makes no

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[207] Ibid.

[208] Ibid.

[209] Paul Dibb, "Strategic Trends: Asia at a Crossroads," *Naval War College Review,* Winter 2001, 27.

[210] Jane's Sentinel Security Assessment - South Asia, Indian Navy, 16 April 2004.

[211] Pugh, *The Cost of Seapower*, 6.

[212] Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: A Debate Renewed* (New York: W.W. Norton,, 2003), 32.

difference in a total nuclear war? This argument is not something new. In fact it was the US Navy, which faced this question after the Second World War when policy makers started thinking out loudly about the utility of the navy in a nuclear environment. This issue was debated in most of the 1950s, giving rise to a lot of skepticism against the role of navies. The British Defense White Paper of 1957 mentioned that 'the role of naval forces in total war is somewhat uncertain.' In the United States this controversy created a good deal of inter-service rivalries, and the US Navy's super carrier program was cancelled in favor of a bomber fleet armed with the new nuclear weaponry.[213] The utility of conventional military forces in a nuclear environment was hotly debated right after the first and only use of nuclear weapons during the Second World War. In words of Bernard Brodie:

> If our cities can be wiped out in a day, if there is no good reason to expect the development of specific defenses against the bomb, if all the great powers are already within striking range of each other, if even substantial superiority in numbers of aircraft and bombs offer no real security, of what possible avail can large armies and navies be?" [214]

The United States Navy, which is one of the most important elements of the U.S. military strategy, had to fight vigorously for its existence and genuinely feared that it would be reduced to a convoy-escort service.[215] Brodie argued that while ships at sea were not the most attractive targets for atomic bombs and their ability to disperse made them comparatively wasteful targets, the question how their own security was affected was not the essential point. He contended that destruction of major industrial cities in a nation would in anyway eliminate the need of seaborne trade to provide raw material for the industry and export of its finished goods and thus would have small use for a fleet to protect it. Moreover, without the national industry to support it, the fleet would soon find itself without the means to function. Brodie, therefore, concluded that "*For it is still*

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213 Geoffrey Till, *Modern Sea Power* (London: Brassey's Defence Publishers, 1987), 24.

214 Bernard Brodie, "Implications for Military Policy," in *The Absolute Weapon: Atomic Power and the World Order* ed. Bernard Brodie (New York: Harcourt, Brace and Company, 1946), 72

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possible for navies to lose all reason for being even if they themselves remain completely immune."(Original in Italics)[216]

The U.S. Navy was seen as "parochial and backward-looking, desperate to justify its existence in a world in which the reach of airpower was being extended all the time, and in which the most likely enemy was virtually land-locked and had only a slight maritime tradition."[217] With the assurance that bombing would provide in any future war, many Americans did not see any need to maintain a strong fleet. A few months before the Korean War, the Secretary of Defense had even ruled out any possibility of amphibious operations by the U.S. Navy in the future, "amphibious operations are a thing of the past. We'll never have any more amphibious operations."[218] Korean War was instrumental in silencing the critics who contended that navies were obsolete. During the war the U.S. Navy met its challenges so well that within two years of the cancellation of the super carrier *United States*, six even larger carriers were laid down.[219] The successful construction of nuclear-powered submarines and their ability to fire ballistic missiles from a submerged position, which was first demonstrated by *USS George Washington* on 20 July 1960 raised the curtain on a new age in warfare.[220] The same navy, whose very existence was questioned by its critics, provided the most important element of the nuclear "triad."[221]

Broadly speaking, there are two supporting arguments for the need of the navy in a nuclear environment. First, the introduction of nuclear weapons on sea-based platforms to attack land-based targets has made the navies more important than they ever had been before.[222] Second, the nuclear weapons must be seen as a means of deterrence, rather than of war fighting. The consequences of nuclear war are so destructive that they

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216 Ibid., 82.

217 Lawrence Freedman, *The Evolution of Nuclear Strategy Third Edition* (New York: Palgrave Mcmillan, 2003), 28.

218 Ibid., 251.

219 Ibid., 254.

220 Ibid., 256.

221 Ibid.

222 Ibid.

inhibited the two super powers from using them during the Cold War. Limited armed conflicts between two nuclear rivals without escalating to a total nuclear war, is not a very remote possibility. It is therefore prudent for nuclear states to maintain credible conventional forces, so that they do not rely solely on nuclear deterrence that risks every thing. Kenneth Waltz argues:

> Because strategic nuclear arms races among lesser powers are unlikely, the interesting question is not whether they will be run but whether countries having strategic nuclear weapons can avoid running conventional races. No more than the United States will new nuclear states want to rely on executing the deterrent threat that risks all. Will not their vulnerability to conventional attack induce them at least to maintain their conventional forces?[223]

The nuclear deterrence in South Asia may have prevented a major war between India and Pakistan since 1998, despite the dangerous situation during Kargil conflict in 1999 and the military standoff in 2001-02. It may however, be noted that as yet both the countries do not meet all the requirements of an effective deterrence.[224] Lack of a credible second-strike capability may invite preemption. According to Barry Nalebuff, there are many reasons to fear an [preemptive] attack in an adversarial relationship:

> A country that fears it is in imminent danger of attack might prefer to preempt. A country that perceives it has a dominant position may then feel forced to attack in order to prevent being preempted. Whenever both sides see a change in their power relationship there is a mutual fear of preemption.[225]

Moreover, the possibility of a breakdown in mutual deterrence can arise through two channels: quantity and quality.[226] While quantity of nuclear weapons in case of India and Pakistan may not have a profound effect in the breakdown of mutual deterrence, the qualitative advantage that India is acquiring demands serious consideration. India is acquiring three sophisticated *Phalcon* Airborne Warning and Control System (AWACS) from Israel at a cost of $1.1 billion, which will be mounted on modified Russian IL-76

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223 Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: A Debate Renewed* (New York: W.W. Norton & Company, 2003), 31.

224 Ibid., 20.

225 Barry Nalebuff, "Minimal Nuclear Deterrence," *The Journal of Conflict Resolution*, September 1988, 412.

226 Ibid., 413.

aircraft, scheduled to be delivered in 2005.[227] India is reportedly interested in acquiring the *Arrow* theater ballistic missile defense system from Israel. Developed jointly by Israel and the United States, Arrow is designed to intercept short and medium-range ballistic missiles at high altitudes, and could potentially be used by India to defend against Pakistan's nuclear-capable missiles. And above all India is actively pursing development and acquisition of nuclear powered submarines and nuclear capable missiles. It has already conducted a number of tests of the Indo-Russian joint venture *Brahmos* supersonic cruise missile, with nascent nuclear capability.[228] Considering the likelihood that Israel already possesses submarine launched ballistic (or cruise) missiles[229] and the fact that Israel has become India's second largest military supplier after Russia, cooperation in the field of submarine launched ballistic/cruise missiles between India and Israel remains a credible possibility. The recent statement of India's chief military scientist Dr. V. K. Atre, lends further credence to this possibility, "Wherever they [Israelis] have strengths, we want to jointly develop the missiles so that both countries can benefit and share designs, costs and risks."[230]

In the light of above developments it would not be naïve to assume that combined together all these capabilities would tilt the qualitative edge unduly in favor of India, which may result in breakdown of mutual deterrence. Pakistan has limited options in face of the changing environment. Development of a sea-based second-strike capability is perhaps inevitable for Pakistan. The policy makers in Pakistan will have to look beyond existing continental biases and assign the Pakistan Navy its rightful role in the overall strategic equation. The efforts to acquire such technology would be challenging and would also require redistribution of existing resources, but at present there are obvious problems. Ayesha Siddiqa-Agha argues:

> Important as it was to use the service [Pakistan Navy] for a second strike capability there were no obvious plans to integrate the Navy in the

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227 "India and Pakistan: Towards Greater Bilateral Stability," *Strategic Survey 2003-2004,* 239.

228 Ibid., 235.

229 Zeev Maoz, "The Mixed Blessing of Israel 's Nuclear Policy," *International Security,* Fall 2003, 47.

230 "India and Israel to Cooperate on Long Range Missiles", 31August 2004, http://www.missilethreat.com/

> nation's nuclear planning…. Increasing options would also tantamount to the [Pakistan] Army giving an equal status to the other two services in military planning. Developing a sea-based second strike capability requires procurement of Naval platforms capable of carrying nuclear warheads. This would be tantamount to diverting resources from Army to the Navy, a development that the larger service might not currently support.[231]

Limited war between India and Pakistan cannot be ruled out in future despite the presence of nuclear weapons and the inherent danger of escalation. This hypothesis is supported by the argument that India appeared convinced during the border crisis in 2001-02 that Pakistan's nuclear signaling was largely bluff and bluster, and in case of a conventional attack across the Line of Control, Pakistan would not use nuclear weapons unless a major city was under siege or its sovereignty threatened. Moreover, India continues to perceive that it could credibly threaten the limited use of force, including surgical strikes in Pakistan administered Kashmir, without crossing Pakistan's red lines. It is based on three assumptions. First, escalation dominance favors India, so Pakistan's most prudent response to 'limited' use of force would be limited and conventional. Second, India's numerical superiority in nuclear weapons will deter Pakistan from a nuclear response. Third, India's large geographical size renders the state far better able to survive a nuclear exchange.[232]

In a future conflict, India may attempt to exploit its overwhelming conventional superiority at sea. This is because of the fact that naval forces are extremely flexible. They can be deployed at high seas, and pose a considerable threat without committing a single war like act. Their mere presence and the possibility of a conflict in itself can seriously affect the seaborne trade by consequent increase in insurance charges and freight rates. An argument by Rear Admiral Richard Hill is relevant in this regard:

> In terms of maritime strategy, it is unlikely that weapons of mass destruction will be widely deployed by new possessors among the medium powers. Ballistic missile submarines, and or for that matter seaborne

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231 Siddiqa-Agha, *Pakistan's Arms Procurements and Military Buildup, 1979-99*, 191.

232 "India and Pakistan: Towards Greater Bilateral Stability," *Strategic Survey 2003-2004,* 234.

> nuclear cruise missile forces, are very expensive and difficult to organize. The sea will become more important in another way. Given the prospect
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> of mutual nuclear deterrence between medium powers confronting one another, a limited maritime dimension of conflict between them becomes more, not less, likely.[233]

For Pakistan, the requirement to maintain some semblance of conventional naval balance with India is more important today than it was ever before. If 'weakness invites aggression,' then it is as applicable to the naval forces as it is to the land forces. Weakness at sea increases the vulnerability and limits the option. In theory "nuclear weapons have provided a land power with the physical means to thwart an enemy's sea-based strategy."[234] Or "a continental enemy could offset deficiencies in naval power by using or threatening to use nuclear weapons at sea."[235] However, in practice it may not be as simple. While nuclear deterrence remains the weapon of the weak; total reliance on the "deterrent threat that risks all," may not be a very prudent approach. The alleged nuclear brinkmanship in the 1990 crisis and the overt nuclear threats made during open hostilities between India and Pakistan during the Kargil crisis in 1999,[236] presumably were not well received by the international community, which is firmly behind the no use of nuclear weapons status quo maintained since the Second World War. In order to effectively deter any misadventure by the Indian Navy in a future conflict and for the nuclear deterrence to work at its best, Pakistan will have to considerably improve the conventional war-fighting capability of its navy.

3. Protection of Expanding Maritime Interests

With the growing integration of world economy and the momentum towards globalization, Pakistan's dependence on sea is bound to increase. Development of

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233 Rear Admiral Richard Hill, RN (Retd), "Do We Need a New Definition of Medium Maritime Power?" in *Maritime Forces in Global Security,* ed. Ann L. Griffiths and Peter T. Haydon (Halifax: Centre for Foreign Policy Studies, Dalhousie University, 1994), 260.

234 Gray, *The Leverage of Sea Power: The Strategic Advantage of Navies in War*, 270.

235 Ibid., 26.

236 Devin T. Hagerty, "Nuclear Deterrence in South Asia: the 1990 Indo-Pakistani Crisis," *International Security*, Winter 1995; Zafar Iqbal Cheema, "Pakistan's Nuclear Use Doctrine and Command and Control," in *Planning the Unthinkable: How New Powers will Use Nuclear, Biological, and Chemical weapons,* ed. Peter R. Lavoy, Scott D. Sagan, and James J. wirtz (Ithaca: Cornell university Press, 2000), 171.

international trade and resource exploitation is often driven by global economic trends. According to Geoffrey Till, "However, centralized governments planning may be, the patterns of international trade and resource exploitation evolve through the action of many forces outside government control as well as some within it."[237] World trade and foreign direct investment (FDI) are identified as the two basic commercial activities that drive the global economy and provide the pillars supporting the economic interdependence in the world. Since the end of Second World War, international trade has blossomed and increasingly fuels growth in domestic economies around the world. Over the last twenty years trade has become a significant part of the global economy and trends are toward greater increases. For example, one analysis predicts that trade's share of world GDP; just 9 percent in the late 1970s will have exceeded 24 percent by 2005.[238] Pakistan's economy is heavily dependent on its international trade, which is showing a steady growth. In 2002-03, Pakistan's external trade accounted for 36.3 percent of the GDP,[239] 95 percent of which is routed through the sea. The recent economic stability in the country and the surge in GDP growth rate, which was 6.4 percent in 2003-04,[240] are expected to increase the trade volume in future.

Construction of a deep-sea port at Gwadar and the ongoing efforts for exploration of offshore resources in Indus Delta region further signify expansion of Pakistan's maritime interests. Since interests and vulnerability are correlated, expanding interests at sea would necessitate even greater emphasis on protection of these resources. Inability of a country to provide protection to its seaborne trade may jeopardize economic growth and endanger national security. According to Milan S. Vego:

> One of the main purposes of command of the sea in the past was, and remains, ensuring the safety of one's own seaborne trade. A country unable or negligent in the provision of protection to its seaborne trade will

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[237] Hill, *Maritime Strategy for Medium Powers*, 47.

[238] John Pruitt, "The Influence of Sea Power in the 21st Century," Working Paper 00-4, August 2000, web.mit.edu/ssp/Publications/working_papers/wp_00-4.pdf

[239] Economic Survey 2002-03, Government of Pakistan, http://www.finance.gov.pk/survey/chapters/09-trade.PDF (5 April 2004).

[240] Economic Survey 2003-04, Government of Pakistan, http://www.finance.gov.pk/survey/chapters/01-Growth.pdf (12 September 2004).

suffer not only great damage but may also find its entire war effort doomed.[241]

The Pakistan Navy within its existing resources and force structure is already overstretched vis-à-vis its roles and would require serious efforts for its development in order to ensure the protection of rapidly increasing maritime interests of the country.

4. Institutional Barriers and Maritime Awareness

Lack of maritime awareness in the masses and institutional impediments created as a result of this ignorance, are major obstacles in the development of maritime sector in general and the Pakistan Navy in particular. Traditionally, Pakistanis are not a sea faring nation and their knowledge about the sea and the enormous potential that it possesses is very limited. Most of the people have never seen the sea primarily because of the remoteness of the sea from majority of the population. Except from the port city of Karachi, the coastal belt along the Makran coast is very thinly populated. Illiteracy is yet another reason for this lack of knowledge. It would not be unfair to say that most of the educated class including the political elite has a very little understanding of the importance of the sea. Since the politicians and for that matter the officer corps in the army are essentially part of the society, their inability to acknowledge the importance of the sea in terms of economic growth and national security ultimately results in the malign neglect of sea that is characterized as "sea-blindness."[242]

Promoting awareness about the sea and its resource potential, the role of the navy to safeguard these interests against predation, and above all the strategic role that the navy has to play in the deterring aggression and maintaining strategic stability is one of the biggest challenges faced by the Pakistan Navy. Establishment of Pakistan Institute of Maritime Affairs (PIMA) by Vice Admiral H. M. S. Choudri in 1991 is a commendable effort in this direction. The institute is dedicated to creating a greater awareness amongst the decision makers of the importance of maritime sector in fostering economic growth and ensuring national security of the country.[243] For more than a decade the PIMA has

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241 Vego, *Naval Strategy and Operations in Narrow Seas*, 254.

242 Hill, *Maritime Strategy for Medium Powers*, 47.

243 Commodore Muhammad Anwar, *Role of Smaller Navies: A Focus on Pakistan's Maritime Interests* (Rawalpindi: The Army Press, 1999), 155.

been making vigorous efforts to identify the inputs, which should go into the planning for an effective naval force, commensurate with the country's needs and resources, as well as into promoting the country's maritime interests as an important element of the nation's economy. In the long run Pakistan Navy will have concentrate in promoting the importance of sea and its enormous resources through a multi-faceted strategy targeting general public and decision makers. In this regard perhaps Pakistan can learn something from Brazil where "school teachers are mandated to inculcate a regard for the sea in their pupils."[244]

5. Economic Constraints and Technological Inadequacies

A balanced navy, capable of contesting command at sea, is much more difficult to build than is a capable army sufficient for the task of taking war to the enemy on land.[245] Navies are difficult to build because of the resources, manpower, and the time they need to transform into an efficient war fighting force. In words of Geoffrey Till:

> A navy is an inheritance not only of hardware and men but history, traditions, methods and concepts, as well as an amalgam of plans and projects for time to come; it cannot, anymore than can maritime economic power, be created overnight, nor in the normal state of affairs can its power be very quickly eroded. Governments can of course alter the direction and emphasis of policy, but their room for maneuver is limited by the inertia of events.[246]

Navies are and have always been expensive and arranging resources necessary for construction and maintenance of a navy is invariably demanding for all countries. The problem for less developed countries is further aggravated with the rapid technological advancement witnessed in naval weapon systems and the inability of these countries to keep pace with these changes. Geoffrey Till has quoted an Australian officer in one of his articles:

> [Navies] place heavy demands on the domestic resources of their nations and on the hard currency reserves of their governments. Navies require substantial industrial and technological infrastructure to support their

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244 Hill, *Maritime Strategy for Medium Powers*, 47.

245 Gray, *The Navy in the Post-Cold War World*, 92.

246 Hill, *Maritime Strategy for Medium Powers*, 47.

> activities, infrastructure which, in the case of the smaller services, may seem disproportionate in relation to the combat capability which it generates.[247]

The problem for the Pakistan Navy are twofold; the limited size of country's economy and the not so good economic performance in the past restrict defense spending despite the fact defense spending in the country has always been accorded the highest priority (at times foreign debt servicing exceeded the defense spending), and secondly the share of navy's budget in the overall defense spending receives the least priority among the three services. Due to the capital-intensive nature of the navy, any major development or acquisition program requires considerable amount of money at any one time, which in case of the Pakistan Navy remains a difficult proposition. Observation of James Goldrick about the economic challenges faced by the Pakistan Navy in the 1990s is still relevant, "The very limited financial resources of the state and the continuing concentration upon the defense of the land border with India meant that it was practically impossible to create or maintain an adequate naval force structure without consistently high level of great power support."[248]

Modern warships, submarines, aircraft, and naval weapons systems incorporate advanced technology are increasingly becoming more sophisticated with every passing day. In fact very few countries in the world can afford to build state of the art naval platforms or weapon systems because of the infrastructure, capital investment, and technological base. The technological base in Pakistan is very limited and navy has to look for foreign sources to maintain and update its fleet. However, there are two inherent problems with foreign sources; they are highly expensive, and they may not always be available due to dynamics of international politics. These challenges have always been there and are likely to stay. Pakistan Navy has understood these challenges very well and has made modest but concerted efforts in overcoming the technological barrier. The maintenance infrastructure in the country has developed overtime and despite the

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247 Geoffrey Till, "Can Small Navies Stay Afloat?" *Jane's Navy International,* 1 May 2003.

248 Goldrick, *No Easy Answers: The Development of the Navies of India, Pakistan, Bangladesh and Sri Lanka 1945-1996*, 149.

difficulties vis-à-vis availability of highly skilled manpower and the associated technological infrastructure, Pakistan Navy's efforts in maintaining its existing fleet within available resources are commendable. The most significant achievement is Pakistan Navy's efforts in transfer of modern technology especially in the domain of ship construction. For over a decade now, the Pakistan Navy has successfully embarked upon indigenous construction of missile boats, conventional submarines and mine hunters, with foreign assistance. This has not only helped in developing the infrastructure needed for such mega projects, it has also helped in acquiring the necessary know how to undertake such projects in future.

D. CONCLUSION

The development of the Pakistan Navy has not been with commensurate with Pakistan's growing strategic and economic maritime interests. There are a number of reasons responsible for this neglect ranging from lack of maritime awareness, strategic culture of the country and physical geography. However, the single most important factor had been the continental mindset of the army and its overwhelming influence in the strategic planning of the country—where navy has the least significant role, which also explains why the Pakistan Navy gets the least priority in resource distribution. Failure of total reliance on land-based strategy in 1971 war with India has not changed the strategic perceptions of military planners. Over the years the navy has managed to survive in face of both internal and external challenges such as resource constraints, inadequate technological base in country and military sanctions. Looking in future, the challenges for the Pakistan Navy are growing. The Indian Navy being the sole external threat enjoys an overwhelming advantage in quality and quantity over the Pakistan Navy and with sustained economic growth in India, the imbalance between the two navies is bound to increase. Even alarming is the quest of India to acquire a sea-based second-strike capability and the vigor with which it is pursuing its goal.

Though nuclear weapons are supposed to counterbalance the imbalance between conventional forces, yet relevance of the Pakistan Navy both in terms of a conventional as well as a strategic force is much more today than it had ever been before. Not only

that Pakistan must concentrate on developing a sea-based second-strike capability, it must at the same time improve the conventional war fighting capability of its navy to deter any kind of aggression or misadventure by India in future. To ensure stability in the region and for the nuclear deterrence to work at its best, the policy makers in Pakistan would have to see through the decades old continental biases and integrate the Pakistan Navy in the overall strategic planning. Development of the navy is also to seen in light of ever expanding maritime interests of the country with increasing reliance on seaborne trade and a step towards offshore exploration. In the long term, the navy must endeavor to promote maritime awareness amongst the masses in general and the decision makers in particular in order to change existing perceptions. The immediate future, however, is unlikely to bring a major change in the situation and the Pakistan Navy will have to work its way through institutional, economic and technological difficulties. Following recommendations are made with respect to the future development of the Pakistan Navy:

- The policy makers in Pakistan must do a thorough reappraisal of the overall military strategy and recognize the importance of the Pakistan Navy as one of the most important pillars of the military strategy.
- Pakistan must improve the conventional war fighting capability of its navy and initiate sustained efforts to make up the existing shortages in naval platforms and weapon systems. While in the short-term Pakistan would continue to rely on foreign sources for advanced naval technology, the ongoing efforts to indigenously construct naval platforms must continue to reduce total reliance on foreign sources in the long-term.
- Pakistan must pursue the acquisition of a sea-based second-strike capability and explore all available possibilities for acquisition of such technology. Redistribution of existing military resources may be made to finance this strategic requirement.
- The Pakistan Navy must initiate a sustained campaign of educating the policy makers and the general public about the importance of the navy and its role in national security of the country.

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V. CONCLUSION

A. INTRODUCTION

Pakistan, as a maritime nation, is heavily dependent on sea and its resources. More than 95 percent of Pakistan's international trade is routed through the sea. In addition sea is the major source of livelihood for people living along the coast. Despite such dependence on seaborne trade and inherited access to sea and its resources, the maritime sector in Pakistan has remained neglected. As a result of this neglect, the maritime sector has developed very slowly and is contributing insignificantly to the economic growth. The Pakistan Navy shares the similar fate and receives the least priority amongst the armed forces. This thesis argues that development of maritime sector in Pakistan is important for sustained economic growth and national security of the country.

B. MAJOR FINDINGS

The role of shipping industry is crucial in supporting the growth of international trade by providing an efficient and cost effective means of transportation. Due to its geography and the geo-political situation in the region, Pakistan is heavily dependent on sea for its international trade. The sea carries over 95 percent of Pakistan's trade, which is approximately 36.3 percent of its GDP. However, despite such heavy reliance on seaborne trade, Pakistan's shipping industry has remained neglected in the past. The shipping industry in Pakistan started off at a good note and moderate growth was witnessed till early 1970s. Thereafter it suffered because of the dismemberment of East Pakistan in 1971 followed by the unwise economic policies of the government in mid 1970s. Nationalization of the shipping industry was a major blow, which scared away private investors and subsequently the nationalized shipping corporation continued on a downward trend mainly because there was no competition from the private sector. The downward trend has so far continued unabated.

Development of shipping industry is important for Pakistan both in terms of economic growth and national security. A healthy shipping industry can save foreign exchange expended on freight charges, earn additional revenues, provide added

employment opportunities, and most importantly protect and promote domestic trade from unfavorable rise in freight and insurance charges. In terms of national security, a well-developed national merchant marine reduces the dependence on foreign carriers, which may not assure continuous supply in case of war or heightened tension. This is especially relevant in case of Pakistan where national merchant marine transports only 5 percent of the total cargo and risk of a conflict with neighboring India in future remains a possibility. After decades of neglect, the government has realized that involvement of private sector is extremely important to achieve any meaningful development in the shipping industry. The newly announced Merchant Shipping Policy by the government is generally considered as a step in the right direction. The incentives announced in the policy were unprecedented in the shipping policies announced by the past governments.

However, it is important for the government to prove its sincerity vis-à-vis promulgation of the policy and protection of genuine interests of the business community in addition to creating a level playing field to attract the private investors. The response of business community has not been very warm and they are extremely cautious in making a come back. This cautious attitude of private investors is understandable considering enormous capital investment requirements and the checkered history of the treatment meted out to them in the past. The government must make a thorough appraisal of the requirements of existing and potential investors and ensure that incentives offered are sufficient to inspire ideas of proportionate risk-taking. Moreover, the bureaucratic institutions involved in functioning of shipping industry must be made business friendly and the legitimate right of business community to make profit must be acknowledged if any serious investment is expected in this sector

Ports not only provide a link between the land and the sea transport, they are a great catalyst for generating economic activity in the region surrounding it. Development of ports in Pakistan has remained slow in the past. Pakistan has relied on the two co-located ports at Karachi. Considering Pakistan's growing dependence on seaborne trade and the historical animosity with India, total reliance on ports situated in close proximity to India is strategically disadvantageous. The coastline west of Karachi was not exploited till very late. There is, however, a shift in the thinking of government, which has

embarked upon an ambitious program of developing Gwadar as a deep-sea port. Emergence of Gwadar port has tremendous economic potentials. The port is envisioned to serve as a conduit for the trade of land-locked states of Central Asia and at some stage develop as a major transshipment port to serve the global seaborne trade in the region. Gwadar would also provide a strategically important base to the Pakistan Navy west of Karachi. In addition construction of the port and related infrastructure would improve the socio-economic conditions of people in coastal areas. The success and development of Gwadar as a major commercial port is not without its challenges. The most important challenge is the internal security situation in the region and the concerns of the nationalist parties in Balochistan. It is extremely important for the government to find a mutually accepted and long lasting solution to the problem and provide a secure environment for private investment, which is crucial for development of the port.

The shipbuilding industry in Pakistan has not been able to operate profitably except for a brief period in the 1970s. Lack of work has rendered the industry virtually idle except for the little support that it receives from the Pakistan Navy. Despite all its economic difficulties, shipbuilding industry remains a strategic asset, which Pakistan cannot afford to lose. Sustenance of shipbuilding is necessary to support indigenous ship construction efforts of the Pakistan Navy. For the industry to become financially viable in the long term, the government must look for foreign investment preferably from China, which is emerging as a major shipbuilder in the world.

The exploitation of offshore natural resources in Pakistan has progressed very slowly. The country has a vast exclusive economic zone, which is potentially rich in both living and non-living resources. However, in absence of scientific data and adequate oceanographic research, true extent of these resources is not known. Exploitation of living resources is mainly limited to marine fisheries, which is the biggest source of employment in the coastal region. The contribution of marine fisheries in the national economy has extensive potential to improve if Pakistan concentrates on exporting value added products as against raw fish and other fishery products. The existing fishing fleet of Pakistani fishermen needs to be modernized for better exploitation and preservation of living resources in the EEZ. Exploration of offshore energy resources has gained some

momentum in the recent years because of attractive policies promulgated by the government. However, the results of these activities are known as yet. Two major challenges in this regard are the high level of marine pollution, which is damaging the offshore living resources and the limited time available for preparation of scientific data for claiming the continental shelf beyond the EEZ.

The Pakistan Navy as an element of military power at sea has always remained neglected because of the continental mindset of the ruling elite and overwhelming influence of the army. Such attitude has hampered the development of the navy, which is in a disadvantageous position vis-à-vis the Indian Navy. Failure of total reliance on land-based strategy in 1971 war with India has not changed the strategic perceptions of military planners. Over the years the navy has managed to survive in face of both internal and external challenges such as resource constraints, inadequate technological base in country and military sanctions. Looking in future, the challenges for the Pakistan Navy are growing. The Indian Navy being the sole external threat enjoys an overwhelming advantage in quality and quantity over the Pakistan Navy and with sustained economic growth in India, the imbalance between the two navies is bound to increase. Moreover the Indian Navy is vigorously pursuing its goal to acquire a sea-based second-strike capability, which will destabilize the strategic balance in absence of a similar capability with Pakistan.

Though nuclear weapons are supposed to counterbalance the imbalance between conventional forces, yet relevance of the Pakistan Navy both in terms of a conventional as well as a strategic force is much more today than it had ever been before. Not only that Pakistan must concentrate on developing a sea-based second-strike capability, it must at the same time improve the conventional war fighting capability of its navy to deter any kind of aggression or misadventure by India in future. To ensure stability in the region and for the nuclear deterrence to work at its best, the policy makers in Pakistan would have to see through the decades old continental biases and integrate the Pakistan Navy in the overall strategic planning. Development of the navy is also to seen in light of ever expanding maritime interests of the country with increasing reliance on seaborne trade and a step towards offshore exploration. In the long term, the navy must endeavor to

promote maritime awareness amongst the masses in general and the decision makers in particular in order to change existing perceptions. The immediate future, however, is unlikely to bring a major change in the situation and the Pakistan Navy will have to work its way through institutional, economic and technological difficulties.

C. RECOMMENDATIONS

Major recommendations of the thesis are summarized below:

- The government must restore the lost trust of business community in order to attract investment in shipping sector. The government must demonstrate sincerity in promulgating the declared policy and its actions must conform to the policy guidelines.
- The government must make a thorough appraisal of the requirements of existing and potential investors and ensure that incentives offered are sufficient to inspire ideas of proportionate risk-taking. The incentives offered should be equal to those offered elsewhere in the world especially in the open-registry countries.
- The right of private sector to make legitimate profit must be acknowledged and the government must ensure that both private and public sectors are treated equally. This should apply to award of any subsidies, special cargo allocation quotas, or award of contracts for transportation of cargo.
- The government should consider setting up of a separate ministry for the shipping industry for effective coordination of shipping requirements of various government agencies and for removing bureaucratic snags, which hamper smooth and efficient conduct of business activities.
- The government must address the security related issues in Gwadar and reach a negotiated solution with the nationalist elements in Balochistan taking due cognizance of their grievances. It is important for envisaged future investment by the private sector.
- The government must explore the possibility of joint collaboration with China for long-term economic revival of domestic shipbuilding industry.
- The problem of marine pollution is seriously degrading the living resources and needs immediate attention. The government must devote more efforts to control and drastically reduce the damage being done by unchecked pollution.
- In order to submit its claim for continental shelf beyond the EEZ, the government must accelerate its effort to gather the scientific and technical data necessary for submitting the claim before the final date in 2009.

- The policy makers in Pakistan must do a thorough reappraisal of the overall military strategy and recognize the importance of the Pakistan Navy as one of the most important pillars of the military strategy.
- Pakistan must improve the conventional war fighting capability of its navy and initiate sustained efforts to make up the existing shortages in naval platforms and weapon systems. While in the short-term Pakistan would continue to rely on foreign sources for advanced naval technology, the ongoing efforts to indigenously construct naval platforms must continue to reduce total reliance on foreign sources in the long-term.
- Pakistan must pursue the acquisition of a sea-based second-strike capability and explore all available possibilities for acquisition of such technology. Redistribution of existing military resources may be made to finance this strategic requirement.
- The Pakistan Navy must initiate a sustained campaign of educating the policy makers and the general public about the importance of the navy and its role in national security of the country.

BIBLIOGRAPHY

"ADB's Response to the Development Challenges Facing Pakistan," Pakistan Development Forum, Islamabad, 12-14 May 2003, http://www.adb.org/Documents/Speeches/2003/ms2003047.asp (15 October 2004).

Anwar, Commodore Muhammad. *Role of Smaller Navies: A Focus on Pakistan's Maritime Interests* (Rawalpindi: The Army Press, 1999).

Aslam, Syed M. "Impact of War on Foreign Trade," *Pakistan and Gulf Economist* (31 May -06 April, 2003).

Aslam, Syed M. "Shipping," *Pakistan and Gulf Economist* (23-29 July, 2001).

Aslam, Syed M. "Shipping: Can New Shipping Policy Revive the Industry," *Pakistan and Gulf Economist* (23-29 July, 2001)

Aslam, Syed M. "An Interview With Managing Director, KSEW," *Pakistan and Gulf Economist* (02-15 December, 2002)

Bedi, Rahul. "India Outlines Vision of Future Nuclear Navy," *Jane's Navy International*, 1 September 2004.

Beresford, A. K. C. et al. "The UNCTAD and WORKPORT Models of Port Development: Evolution or Revolution?" in *Maritime Policy & Management* April-June 2004.

Bird, James. *Seaports and Seaport Terminals* (London: Hutchinson & Co, 1971).

Board of Investment, Government of Pakistan, http://www.pakboi.gov.pk/bfacts/ports.html (20 October 2004).

Branch, Alan E. *Elements of Port Operation and Management* (London: Chapman and Hall, 1986).

Brodie, Bernard. "Implications for Military Policy," in *The Absolute Weapon: Atomic Power and the World Order* ed. Bernard Brodie (New York: Harcourt, Brace and Company, 1946).

Cable, James. *The Political Influence of Naval Force in History* (New York: St. Martin's Press, 1998).

Cheema, Zafar Iqbal. "Pakistan's Nuclear Use Doctrine and Command and Control," in *Planning the Unthinkable: How New Powers will Use Nuclear, Biological, and Chemical Weapons,* ed. Peter R. Lavoy, Scott D. Sagan, and James J. wirtz (Ithaca: Cornell university Press, 2000).

Closs, Col Virginia. et al. "Shipbuilding," http://www.ndu.edu/icaf/industry/IS2001/2001%20Shipbuilding.doc (6 October 2004).

"Convention on a Code of Conduct for Liner Conferences," http://www.admiraltylawguide.com/conven/liner1974.html (10 November 2004).

Cottrell, Alvin J. and Associates, *Sea Power and Strategy in the Indian Ocean* (Beverly Hills: Sage Publications, 1981).

Coulter, Daniel Y. "Globalization of Maritime Commerce: The Rise of Hub Ports," in Sam J Tangredi, ed. *Globalization and Maritime Power,* (Washington D.C.: National Defense University Press, 2002).

Defense Security Cooperation Agency, 36(b) Arms Sales Notification Index, http://www.dsca.osd.mil/PressReleases/36-b/36b_index.htm

Deger, Saadet and Somnath Sen. "Military Security and the Economy: Defence Expenditure in India and Pakistan" in *The Economics of Defence Spending: An International Survey*, ed. Keith Hartley and Todd Sandler (London: Routeledge, 1990).

Dibb, Paul. "Strategic Trends: Asia at a Crossroads," *Naval War College Review,* Winter 2001.

Dollar, David and Aart Kraay. "Trade, Growth, and Poverty," Development Research Group, The World Bank, March 2001, http://www.worldbank.org/research/growth/pdfiles/Trade5.pdf (18 September 2004).

Economic Survey 2003-2004, Ministry of Finance, Government of Pakistan, http://www.finance.gov.pk/survey/chapters/09-trade.PDF. (12 September 2004).

Frankel, Ernest Gabriel. *The World Shipping Industry* (London: Croom Helm Publishers, 1987).

Freedman, Lawrence. *The Evolution of Nuclear Strategy Third Edition* (New York: Palgrave Mcmillan, 2003).

Friedman, Norman. *Seapower as Strategy* (Annapolis: Naval Institute Press, 2001).

Goldrick, James. *No Easy Answers: The Development of the Navies of India, Pakistan, Bangladesh and Sri Lanka 1945-1996* (Hartford: Spantech & Lancer, 1997).

Gray, Colin S. *The Leverage of Sea Power: The Strategic Advantage of Navies in War* (New York: Free Press, 1992).

Gray, Colin S. *The Navy in the Post-Cold War World* (University Park: Pennsylvania State University Press, 1994).

Hagerty, Devin T. "Nuclear Deterrence in South Asia: the 1990 Indo-Pakistani Crisis," *International Security*, Winter 1995

Hansen, Harald. *The Developing Countries and International Shipping*, (Washington: World Bank Staff Working Paper No. 502, 1981).

Hawkins, William R. "How China Plans to Dominate the Shipbuilding Industry," http://americaneconomicalert.org/view_art.asp?Prod_ID=80 (17 October 2004).

Hill, Rear Admiral Richard. "Do We Need a New Definition of Medium Maritime Power?" in *Maritime Forces in Global Security,* ed. Ann L. Griffiths and Peter T. Haydon (Halifax: Centre for Foreign Policy Studies, Dalhousie University, 1994).

Hill, Rear Admiral J.R. *Maritime Strategy for Medium Power* (Annapolis, Maryland: Naval Institute Press, 1986).

Hiranandani, Gulab, Vice Admiral Indian Navy (Retired). "The Indian End of the Telescope—India and Its Navy," *Naval War College Review,* Spring 2002.

"India and Pakistan: Towards Greater Bilateral Stability," *Strategic Survey 2003-2004.*

"India and Israel to Cooperate on Long Range Missiles", 31 August 2004, http://www.missilethreat.com/

International Finance corporation, Environmental Review Summary, http://ifcln101.worldbank.org/IFCExt/spiwebsite1.nsf/2bc34f011b50ff6e85256a550073ff1c/c5a9a62e7a1c921b85256c4f006e2c79?OpenDocument (9 October 2004).

Iqbal, Sheikh Muhammad. "Shipping in Pakistan," *Pakistan and Gulf Economist* (September 27—October 2, 1999), http://www.pakistaneconomist.com/issue1999/issue39/i&e5.htm (6 April 2004).

Jane's Sentinel Security Assessment - South Asia, Indian Navy, 16 April 2004.

Jane's Sentinel Security Assessment - South Asia, Pakistan Navy, 23 April 2004.

Jane's Navy International – 1 November 2003.

Javaid, Sheikh. "Gwadar—The Dream City of South Asia," *Pakistan and Gulf Economist* (July 9-15, 2001)

Jones, Rodney W. "Is Nuclear Deterrence Feasible?" 22-26 February, 2002, http://www.ceip.org/files/projects/npp/pdf/stablenucleardeterrence.pdf (15 July 2004).

Leckie, Robert. *The Wars of America* (New York: HarperCollins, 1992).

Ludwig, Hans et al. *25 Years of World Shipping* (London: Fairplay Publications, 1984).

Lovett, William A. "Realistic Maritime Renewal," in *U.S. Shipping Policies and the World Market* ed. William A. Lovett (Westport: Quorum Books, 1996).

Maoz, Zeev "The Mixed Blessing of Israel 's Nuclear Policy," *International Security,* Fall 2003.

Millwala, Munir I. "Shipping: The Key Issues," *Pakistan and Gulf Economist* (19-25 July, 1999), http://www.pakistaneconomist.com/issue1999/issue29/i&e3.htm (6 May 2004).

"Merchant Fleets of the World", US Department of Commerce Maritime Administration, November 1983.

Ministry of Food, Agriculture, and Livestock, Government of Pakistan, http://www.pakistan.gov.pk/food-division/informationservices/minfal-01.htm (9 October 2004).

Nalebuff, Barry. "Minimal Nuclear Deterrence," *The Journal of Conflict Resolution*, September 1988.

National Institute of Oceanography, Pakistan, http://www.niopk.gov.pk/intro-1.html (9 October 2004).

Pakistan National Shipping Corporation Website, http://www.pnsc.com.pk/profile.html (10 November 2004).

"Pakistan: Poverty Reduction Strategy Paper," January 2004, IMF Country report No. 04/24.

Pakistan Sector Assessment Review, Asian Development Bank, October 2003, http://www.adb.org/Documents/Studies/PAK_Sector_Assessment_Review/psar_2003oct.pdf (10 October 2004).

Pakistan: Ocean and Coastal Areas, Integrated Coastal Management, http://www.globaloceans.org/country/pakistan/pakistan.html (15 October 2004).

Part VI, Continental Shelf, The United Nations Convention on the Laws of the Sea, http://www.un.org/Depts/los/convention_agreements/texts/unclos/part6.htm (18 October 2004).

Pruitt, John. "The Influence of Sea Power in the 21st Century," Working Paper 00-4, August 2000, web.mit.edu/ssp/Publications/working_papers/wp_00-4.pdf

Pugh, Philip. *The Cost of Seapower* (London: Conway Maritime Press, 1986).

Regional Seminar on Liberalization of Maritime Transport Services under WTO GATS, Country Report Pakistan, http://www.unescap.org/tctd/nvg/wtogats2002files/pakistan_wtogats.pdf. (7 May 2004).

"Regional Shipping and Port Development Strategies – Under a Changing Maritime Environment", Maritime Policy Planning Model by UNESCAP/UNDP, http://www.unescap.org/tctd/pubs/files/mppm_nov2001_escap2153.pdf(9 October 2004).

"Review of Maritime Transport, 2003", UNCTAD Secretariat, United Nations, New York and Geneva, 2003.

Rizvi, Shamim Ahmed. "New Measures in the Shipping Policy," *Pakistan and Gulf Economist* (22-28 April, 2002) http://www.pakistaneconomist.com/issue2002/issue16/i&e4.htm (9 June 2004).

Sagan, Scott D. and Kenneth N. Waltz. *The Spread of Nuclear Weapons: A Debate Renewed* (New York: W.W. Norton,, 2003).

Shashikumar N. "World Shipping Competition," in *U.S. Shipping Policies and the World Market* ed. William A. Lovett (Westport: Quorum Books, 1996).

Siddiqa-Agha, Ayesha. *Pakistan's Arms Procurements and Military Buildup, 1979-99* (New York: Palgrave, 2001).

Stopford, Martin. *Maritime Economics Second Edition* (London: Routledge Press, 1997).

Story of the Pakistan Navy, History Section, Naval Headquarters, Islamabad (Karachi: Elite Publishers, 1991).

Tangredi, Sam J., ed. *Globalization and Maritime Power,* (Washington D.C.: National Defense University Press, 2002).

Technical Assistance for the Turkmenistan-Afghanistan-Pakistan Natural Gas Pipeline Project (Phase II), December 2003, Asian Development Bank.

Tellis, Ashley J. *Stability in South Asia* (Washington, D.C.: RAND, 1997).

The Indian Navy Today, http://www.bharat-rakshak.com/NAVY/Gorshkov.html (10 Augus 2004).

The World Bank country data on Pakistan, http://www.worldbank.org/cgi-bin/sendoff.cgi?page=/data/countrydata/aag/pak_aag.pdf (15 September 2004).

Till, Geoffrey. "A Changing Focus for the Protection of Shipping" in *The Strategic Importance of Seaborne Trade and Shipping*, ed. Andrew Forbes (Canberra: RAN Sea Power Centre, 2003).

Till, Geoffrey. *Modern Sea Power* (London: Brassey's Defence Publishers, 1987).

Till, Geoffrey. "Can Small Navies Stay Afloat?" *Jane's Navy International,* 1 May 2003.

Todd, Daniel. *Industrial Dislocation: The Case of Global Shipbuilding* (New York: Routledge, 1991).

"UNCTAD Convention on a Code of Conduct for Liner Conferences," http://www.admiraltylawguide.com/conven/liner1974.html (10 September 2004).

UNCTAD Handbook of Statistics, 20, http://www.unctad.org/en/docs//tdstat28_enfr.pdf (19 March 2004).

Vahidy, Hassaan and Fereidun Fesharaki. "Pakistan's Gas Discoveries Eliminate Import Need," *Oil & Gas Journal Tulsa,* 28 January 2002.

Vego, Milan N. *Naval Strategy and Operations in Narrow Seas* (Portland: Frank Cass, 1999).

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